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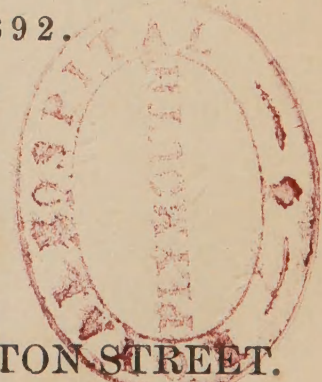
THE
DUBLIN JOURNAL
OF
MEDICAL SCIENCE.

EDITED BY
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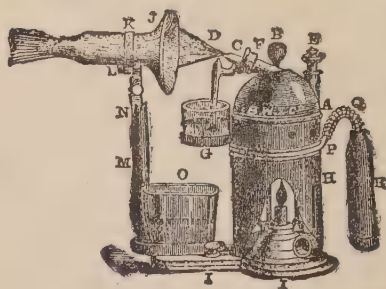


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AND

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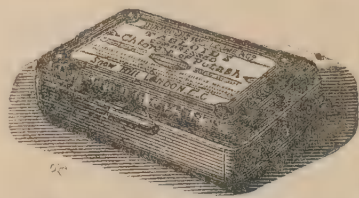
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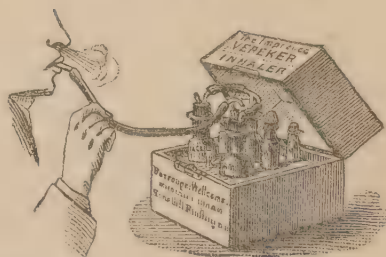
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IN the present paper I propose to collect and summarise the results of some recent investigations. I shall endeavour to show the light which these doctrines and inquiries have thrown, and are calculated still more in the future to shed upon the group of diseases of the skin.

No attempt at a complete survey will be made, nor would, indeed, be possible in the time, and a restricted field—that of cutaneous diseases—is purposely chosen, for the sake of illustration, although it will be obvious that the facts to be referred to have a much wider scope.

For example, it will be remembered that last session in the Section of Pathology Dr. Bewley read an instructive paper upon the Pathology of Empyema, in which he showed that empyema is always due to the entrance of pus-producing organisms into the pleural cavity, either directly from without, or through a diseased lung, or by the route of the blood and lymph-vessels.

Results such as these have been acquired by the patient labours of experts in modern microscopical research. While only the

^a Read in the Section of Medicine of the Royal Academy of Medicine in Ireland Nov. 20th, 1891.

minority can be fellow-workers in this attractive field, the rich harvest which is being garnered can and ought to be eagerly seized upon by all practitioners who desire to keep pace with the rapid strides of knowledge.

It is scarcely necessary to add that I do not at all wish to convey that dermatology is becoming a mere sub-section of bacteriology. Rather does the skin afford an epitome of general and special pathology, and the attempts to unravel its problems have been fruitful in elucidating pathological questions.

I shall allude more particularly to instances wherein our pathological conceptions have been simplified, and our views cleared, and hope to show that treatment has been rendered more rational and more successful.

If we glance at any of the current text-books upon Diseases of the Skin, we find a chapter or chapters devoted to the Vegetable Parasitic Diseases of the Skin. The affections usually described under this heading are some five or six in number.

Arranged in order of the discovery of their exciting cause, we start from the important discovery made in 1839 by Schönlein, who was the first to recognise and accurately describe the fungous character of the elements constituting a favus crust. To this succeeded the discovery by Gruby and Malmsten in 1843 of the fungus of ring-worm, and that of tinea versicolor by Eichstedt in 1846.

Notwithstanding the length of time these organisms have been known, and in spite of numerous investigations, their exact botanical affinities and mutual relationships have not yet been satisfactorily determined.

Even in the case of favus, whose clinical characters are so sharply defined, observers are not agreed as to whether we should acknowledge one only or several distinct forms of fungus.^a

Many other problems await solution, some of them of old standing—viz., whether alopecia areata is a parasitic disease or not.

What a revolution is taking place in dermatology may be inferred from the fact that eleven years ago Kaposi, adverting to Hallier's mycological teaching, states that some of the investigations carried out in the direction indicated by him were so frivolous and resulted in such monstrosities that they excited the greatest mistrust of Hallier's results. "For," he scornfully adds, "there

^a Cf. Pick und Král. Untersuchungen über den Favus. Monatsh. f. prakt. Dermat. XIII., p. 52.

was no single disease, whether warts, eczema, psoriasis, pruritus cutaneus, or inflammation, erysipelas, &c., which would not be attributed to a fungus" (Hebra, "Diseases of the Skin," New Sydenham Soc., Vol. V., p. 129).

Who, it may well be asked, would now deny that erysipelas and suppurative inflammations are due to parasitic organisms, to say nothing of the disputable ground presented by warts,^a eczema, and psoriasis.

When we consider the exposed position, the extent of surface, and the innumerable creases, folds, and crevices in the human epidermis, it is little matter for surprise that it has been found to be the home of a great variety of micro-organisms. Thus, Unna, in an investigation of sixty pure cultures from a series of cases of seborrhœic eczema, discovered no less than fifty different *Mucors*, twenty different kinds of *Penicillium*, five *Aspergilli*, about a dozen forms belonging to the groups *Oidium* and *Saccharomyces*, besides a goodly number of partly known, partly unknown, cocci and bacilli.

Král succeeded in growing three pure cultures of mould fungi from "eczema marginatum," all of which possessed the common property of flourishing luxuriantly at the body temperature, while at the temperature of the room they grew but slowly and imperfectly (*Monatsh. f. prakt. Derm.*, 1890, p. 185).

In truth, there is an extensive Flora Dermatologica which vegetates upon the epidermis of man. The beginnings of our knowledge of it have been laid by Unna and his assistants, who have studied the appearances, macroscopic and microscopic, of these organisms, and their characters after cultivation in various media (*Monatsh. f. prakt. Dermat.*, 1888, VII., p. 817, *et seq.*).

Many of these fungi are harmless, some are merely saprophytic, and a few are real mischief-makers (*cf.* Die Färbung der Mikroorganismen im Horngewebe. Unna. *Monatsh. f. prakt. Derm.* XIII., p. 325).

As a matter of convenience, I have distributed the illustrations which I shall adduce under separate propositions:—

I. Some maladies hitherto ascribed to vague and unknown causes of internal origin are really traceable to infection, usually from without.

I shall upon this occasion dismiss with a nominal mention the case of lupus, whose specificity is generally acknowledged, and that of certain forms of purpura, which have been shown to be

^a Cf. Kuhnemann. Monatshefte f. prakt. Dermatol. VIII., IX.

due to a fibrino-bacterial thrombosis (Tizzoni: Giovannini. de Guinard. *Monatsh. f. prakt. Derm.* X., p. 473; XI., p. 74).

Let us dwell shortly upon the examples of (a) erysipelas; (b) impetigo; (c) boils and carbuncles.

As to erysipelas, it may be regarded as proven that it is strictly caused by the intrusion of a streptococcus into the lymphatic channels of the skin or mucous membrane, and it is worth remarking that the contagious character of erysipelas was known in England long before it was recognised in Germany.

Erysipelas and lymphangitis are not convertible terms.

In connection with erysipelas, we are reminded of the interesting and important topic of the antagonism of micro-organisms, for erysipelas and vaccinia are examples of infective diseases, the artificial production of which has been suggested and used as a means of cure for other diseases—*i.e.*, lupus, and certain forms of tumour (Fehleisen, *Micro-parasites in Disease. Selected Essays*, New Syd. Soc., p. 272; and Watson Cheyne, *Lectures on Suppuration*, p. 83).

Now, erysipelas often starts from a source of suppuration, and may itself be complicated by or end in suppuration, and, again, suppurative affections of the skin of primary and secondary origin are phenomena familiar to us in every-day practice.

It is generally held as settled that *acute* suppuration is, as Ogston first showed, due to the action of micro-organisms;^a but it is a difficult matter to determine whether erysipelas is an entity, a truly specific disease, or whether it does not represent a phase or mode of action of the pus-producing organisms. Watson Cheyne is inclined to uphold the specific character of the erysipelas germ, while Levy in a valuable paper (*Archiv. f. exper. Path. u. Pharm.* XXIX. Ueber die Mikro-organismen der Eiterung, p. 135), teaches that streptococcus pyogenes is at once an exciter of suppurative processes and of erysipelas. It is more than probable that there are several species of erysipelas due to different bacteria.

However this may be, it is a distinct advance in our knowledge to grasp the fact that the affections known as impetigo, boils, and carbuncles are invariably produced only under the influence of micro-organisms.^b We are thereby enabled to get clearer views of

^a Karlinski gives interesting statistics, based upon 200 cases of purulent inflammation, of the different forms of cocci and bacilli concerned—(*Monatsh. f. prakt. Derm.* X., p. 420).

^b Cf. Bockhardt's classical paper—Ueber die Ätiologie u. die Therapie der Impetigo, des Furunkels, u. der Sykosis—(*Monatsh. f. prakt. Derm.*, 1887, p. 450).

their clinical history and progress, and our treatment is rendered less haphazard and more scientific.

The clinical differences in these affections can be explained by such considerations as these. Pus probably varies in virulence according to its origin, and pathogenic micro-organisms certainly vary in virulence according to the external conditions in which they find themselves. In a word, the character of the mischief done—*i.e.*, the type of the disease—depends not alone upon its direct cause, but also largely upon the mode of entrance and the seat of development of the organisms (Bockhardt: Garré).

Levy (*loc. cit.*) adduces evidence to show that the *Bacterium coli commune* may induce all possible forms of inflammation—*viz.*, simple suppuration, inflammation of serous membranes, lymphangitis, and general blood-poisoning.

We are becoming more and more impressed with the conception, one of great importance, that the purely morphological study of bacteria is not the safe guide it was supposed to be in the dawn of bacteriology. A far more weighty point is the degree of virulence, coupled with investigations as to the conditions under which its virulence can be respectively augmented or attenuated.

We can easily see why pustular eruptions are common on the heads of children infected with pediculi. The reason is that pyogenic organisms often lurk beneath the nails or exist attached to hairs, and hence are readily inoculated by scratching into the little wounds inflicted by the pediculi.

It is an old observation, and one which Mr. Hutchinson has emphasised in his teaching (*i.e.*, his aphoristic definition of *Impetigo contagiosa*—*viz.*, “common, contagious, curable”), that pus is contagious; but, it should be remembered that pus, apart from the organisms which it contains, does not exert a pyogenic action (Cheyne). So that, strictly speaking, “*impetigo contagiosa*” does not represent a specific entity, because all forms of impetigo are, from their pathogenesis, contagious.

Considering the very great frequency of wounds and breaches of surface, it may appear strange that inflammatory and suppurative diseases are not more commonly met with. To this it may be replied that pyogenic organisms are not so abundant in the air as might be supposed, they are rarely present in putrefying fluids, and, moreover, they act only under certain special conditions. We are, besides, led by experience to conclude that susceptibility to the action of pyogenic organisms is, in many individuals, but slight.

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Virulence is probably altered by many slight and unexpected causes.

Is the dictum then true—"No bacteria, no pus"?

This is partly a verbal question, and turns upon our idea of what constitutes "true creamy pus" (Cheyne). Watson Cheyne leans to the doctrine of the essential connection between pus and bacteria ("Suppuration and Septic Diseases," 1889, p. 29); while Burdon Sanderson considers it proved that suppuration can be induced without the aid of microphytes (Croonian Lectures, *Brit. Med. Journ.*, Nov. 14, 1891, p. 1,033). V. Sehlen's observations in Unna's laboratory confirm this latter view (*Monatsh. f. prakt. Derm.*, XI., p. 327).

If organisms which are usually pyogenic—viz., *Staphylococcus pyogenes*, may in certain cases be purely phlogogenous (Levy, *loc. cit.*, p. 162)—why refuse to admit that non-microbic irritants may, under certain circumstances, excite suppurative inflammation? Can we determine when suppuration commences, and what test have we to decide when inflammatory exudation passes into purulent exudation? What is the "critical point" of suppuration?

Conversely it may fairly be asked, Does the presence of pyogenic organisms in an inflammatory effusion necessarily indicate that the effusion will become purulent? Levy (*Archiv. f. exp. Path. u. Pharm.* XXVII.) has shown that the presence of *Staphylococcus pyogenes* in a pleural effusion does not prove that it will become purulent.

At any rate, everyone admits that acute suppuration can be most surely brought about by micro-organisms.

Let us now for a moment stop to inquire in what ways these organisms gain access to the skin.

1. From without, through the epidermis. This is by far the most frequent mode. A wound or breach of surface offers an open door of entrance, but they may also enter through the uninjured epidermis, penetrating into the sweat ducts, hair follicles, and sebaceous gland openings. If the epidermis were an absolutely continuous horny sheet, devoid of glandular orifices, and remained uninjured, then we should undoubtedly less often see a pustule or boil on the skin. Yet it must be admitted that pus cocci may penetrate into the lymph-channels of the skin through the intact epidermis (Garré). Bockhardt's and Garré's disinterested experiments upon their own bodies are conclusive as to the pathogeny of whitlow, carbuncle, and boils—viz., that they are local

infective diseases. The well-known predilection of furuncles for certain localities—*e.g.*, neck, loins, and axilla—is explained by the closely-applied parts of the dress favouring a thorough inunction of infective germs present over these parts, the result of this inunction being rendered correspondingly certain by the presence of the sweat (Garré, “*Microparasites in Disease.*” Selected Essays, New Syd. Soc., 1886). If the micrococci invade only the epidermis we have a superficial pustule—*i.e.* (a) impetigo^a; if the intruders find their way deeper down the hair-follicles and gland-ducts, we have a more violent inflammation, with or without necrosis—*i.e.* (b) a boil, phlegmon, or suppurative folliculitis, and a congeries of furuncular points form (c) a carbuncle, which bears to a boil somewhat the same relation as that of a Peyer’s patch to a solitary gland.

Ecthyma is scarcely worth retaining in nomenclature, for it is merely an aggravated form of impetigo, occurring chiefly on the lower limbs and on an unhealthy soil—*e.g.*, alcoholic or syphilitic.

2. The infection may occur from within outwards—*i.e.*, from the blood. This is true of only a small minority of cases. But it probably explains the occurrence of certain examples of mammary abscess, some of the instances of abscesses, boils, and other forms of local inflammation which are apt to occur, for example, in the wake of severe cases of continued fevers, epidemic influenza, &c. Pyogenic cocci have been found in the blood of patients suffering from various acute diseases, and by no means necessarily give rise to local troubles, for the production of which other concurrent factors are usually required. In eight cases of pyæmia and puerperal fever, and of which four died, Levy succeeded four times in demonstrating *Staphylococcus albus* in the blood of the living patients (Ueber die Mikro-organismen der Eiterung. *Archiv.f. exp. Path. u. Pharm.*, XXIX., 136).

II. What have been commonly described as different forms or varieties of disease are often really due to the co-operation of different causes.

Let me give one or two illustrations. *Acne*—Here we have two processes:—

(a) The closure of the follicle and the formation of a comedo.

(b) Suppuration within the follicle.

This arises either from the presence of micrococci which had been bottled up inside the plugged follicle or by subsequent

^a Hence, impetigo is not a mere stage or phase of eczema.

infection. Hence, the two chief indications for local treatment are:—

(i.) To loosen and remove the horny plugs.

(ii.) To kill the micrococci which induce suppuration.

Scabies.—The eruption in this disease is described as consisting of papules, vesicles, and pustules. The pustules are really due to accidental secondary infection with pus cocci.

Syphilis.—Are pustular eruptions in a syphilitic patient the direct outcome of the syphilitic virus? Most of them are surely due to a “mixed infection;” and Leloir has since 1886 been in the habit of describing them in his clinique as purulent para-syphilitic complications.

Eczema.—The composite group of affections which we term eczema is being gradually disentangled.^a I can now mention only two points. First, the occurrence of post-eczematous boils, which sometimes occur as a complication or sequela. They are rare in connection with other diseases of the skin. We explain these boils and abscesses by inoculation of the skin with pus-germs, the pre-existing eczema furnishing a suitable soil. Secondly, the eczema impetiginosum (not to be confounded with primary impetigo contagiosa), common on the face of children, is not, as some authors maintain, a variety of eczema. It is really a hybrid condition—*i.e.*, an eczema upon which an impetigo has been grafted, by inoculation with staphylococcus. Hence, as we see, the disease is far more frequent on uncovered than on covered parts, because it is propagated by scratching. In the course of appropriate treatment, further, it is comparatively easy to stop the suppuration—*i.e.*, cure the impetigo—but we then still find ourselves face to face with a chronic eczema, with its notorious resistance to treatment (Dubreuilh. *Annal. de Derm. et de Syphl.*, 1890).

Lupus and Scrofuloderma.—Although the latter term is scarcely susceptible of exact definition, it is convenient to retain it for the group of affections characterised by these marks—*viz.*, indolent, dusky inflammation of the skin, readily undergoing suppuration, the tissue so spongy that it can be scraped away with the greatest facility, and leaving a thin white scar.

Such a condition of things is often conjoined with ordinary

^a For example, the term “eczema marginatum” embraces several distinct affections—*viz.* (a) erythrasma; (b) tinea circinata; (c) tinea versicolor; (d) pityriasis circinata (Vidal); (e) eczema seborrhoicum; (f) forms of lichen circumscriptus (Vidal, Brocq).—(*Monatsh. f. prakt. Derm.* XIII., p. 102.)

nodular lupus. In what relation to each other are we to view lupus and scrofuloderma? A plausible theory has been advanced by Unna, and Leistikow, who has examined the question bacteriologically, adopts the theory which, briefly, is this, that scrofuloderma is an affection caused by the symbiosis of *Staphylococcus pyogenes aureus* and *Bacillus tuberculosis*. Or, in other words, scrofuloderma represents a case of "mixed infection" by the tubercle bacillus and by the ordinary excitors of pus.^a

According to the predominance of one or other of these disturbers of nutrition, will the tissues exhibit a tubercular or a suppurative tendency.

☞ The tubercle virus thrives best in organs which are readily prone to hyperæmia. The skin, which in most situations is anæmic, does not offer a very suitable soil for the bacillus. It fixes itself generally on parts which are normally hyperæmic—viz., cheeks, nose, and ears. Around a spreading lupus we always find a zone of capillary congestion.

Should the tubercle bacillus fail to meet with a persistent hyperæmia in its neighbourhood, then its deleterious action may be arrested, and it becomes encapsuled in a dry, caseous mass. Hence the extraordinary chronicity and the intermittent progress of the lupous disease. Pus cocci, on the contrary, always induce active hyperæmia and extravasation, wherever they penetrate into normal skin-tissue. But if the pus cocci arrive as secondary elements upon a tuberculised soil, they find there a badly nourished tissue, a soil unsuited for their development, and which does not allow them to produce acute phlegmonous inflammation. Instead, therefore, we get a gummy gelatinous softening of the tissue, a degeneration midway between the dry caseation of tubercle and purulent softening. Such a tissue would be more easily and more completely removed by "scraping," and so, as clinical experience confirms, be less liable to relapse (Ueber Skrofuloderma; Dr. L. Leistikow.—*Monatsh. f. prakt. Derm.* XI., p. 438).

Leloir holds views identical with these.

III. Classification of diseases of the skin is rendered more accurate.

One example will suffice—viz., sycosis. This term was for a long

^a Similarly, the gonococcus alone is unable to give rise to a suppurating bubo. When a suppurating bubo occurs as a complication of acute gonorrhœa it is always due to a "mixed infection" with pyogenic cocci, which are found in the pus from the bubo. The bubonic pus does not contain gonococcus.

time, and is still, far too often used loosely in a merely topographical sense—*i.e.*, for any obstinate pustular affection involving the hairy parts of the face.

The next step in advance was the distribution of the cases into two groups—*viz.*, parasitic sycosis (*tinea sycosis*), and non-parasitic sycosis (“ordinary sycosis”!!) This subdivision is maintained in our most recent text-books, notwithstanding Bockhardt’s conclusive observations were published in 1887.^a

From the date of Bockhardt’s paper we must deny the existence of a non-parasitic sycosis, and, in the present state of knowledge, the cases fall into three groups:—

- (a) Coccogenous sycosis; due to *staphylococcus*, the so-called non-parasitic sycosis of authors.
- (b) Hyphogenous sycosis; due to *trichophyton*, the so-called parasitic sycosis (ringworm of the beard) of authors. Exists as (i) superficial (ii) deep form.
- (c) Bacillogenous sycosis; due to a bacillus named *Bacillus sycosiferus foetidus* (Tommasoli. *Monatsh. f. prakt. Derm.* VIII., p. 483).

(Cf. Ueber ulerythema sycosiforme. Dr. Sack.—*Monatsh. f. prakt. Derm.* XIII., 133, and Disseminierte, parasitäre Perifolliculitis, *Ebenda.* XIII., 319).

IV. Since dermatology is at present in an active transitional state, the exposition of skin-diseases in text-books will have to be largely re-cast. Much greater attention must in future be paid to ætiology.

V. We can better see the reasons for much of our management of skin affections, and we recognise more clearly the importance of prophylactic measures.

Ringworm.—Everyone knows the ease with which ringworm can be cured on the smooth parts of the body, or those only provided with lanugo, and its obstinate resistance to treatment when situated on the scalp. Scharff’s observations (*Monatsh. f. prakt. Derm.* X., 536), account for this. The human epidermis (horny layer) is a poor soil for the growth of *trichophyton*, which, in its turn, gives rise to only slight disturbances of nutrition in the skin, but even moderate inflammatory reaction is prejudicial to the life of the fungus, which consequently perishes, or is easily cured by parasiticide and irritant applications. Scharff found mycelium very scantily present, and only in the deeper layers of the horny

^a *Loc. cit.*

stratum and in the lower part of the hair follicle; none in the prickle layer.

Upon the head, on the contrary, the fungus flourishes luxuriantly, and produces, as a rule, little inflammatory reaction. The artificially produced irritation and inflammation, so often used in the treatment of ringworm of the scalp, finds then its prototype and its justification in the moderate reaction which occurs upon the smooth parts of the skin.

(*Cf.* An interesting series of bacteriological experiments upon the relative value of certain drugs in the treatment of favus and ringworm, by Dr. Schwenger.—*Monatsh. f. prakt. Derm.* XI., 155.)

Erysipelas.—Accepting the parasitic nature of erysipelas as an undeniable fact, the position of those who, from clinical observation, have rejected the use of nitrate of silver and other local astringents in its treatment is amply justified. It is, I think, not more rational than the so-called abortive treatment of small-pox eruption; and, similarly, I must express my disbelief in the utility of the much-vaunted chalybeates internally.

Boils (Carbuncle) and Impetigo.—While the treatment of the superficial form of pustular dermatitis is often as satisfactory as it is simple, it is quite otherwise with the deeper grade of inflammation typified by a common boil. They are sometimes half welcomed—nay, if possible, encouraged by the laity under the lingering superstition that they afford an outlet for the evil spirits that torment the body, but ere long the patient will be ready to say:—

“Die ich rief, die Geister
Werd’ich nun nicht los.”

(Quoted by Garré.)

Now that the cause of boils is known to be parasitic infection, it will follow that, in the great majority of cases, they own an external origin, and the theory, still so dear to the minds of many, that they are entirely due to some vague constitutional cause (“impurity of the blood!”) has received its quietus.

The indications for successful treatment fall naturally under four heads:—

1. To destroy by parasitocides the intruding cocci before they have induced necrosis of tissue.
2. When necrosis has occurred, to hasten as much as possible the expulsion of the necrotic plugs with their contained cocci.
3. To guard against the development of new boils through infection by means of cocci spreading from the older boils.

4. To place the organism in such a position as to render it as resistant as possible to invasion by micrococci.

As Veiel well points out (*Ueber die Therapie der Furunkulose. Monatsh. f. prakt. Derm.*, XI., 362), the first indication can seldom be fulfilled. For once the cocci have penetrated far enough to lead to visible swelling and formation of papule or vesicle, necrosis has, as a rule, begun, and the glandular ducts are clogged by exudation plugs, so that the external application of antiseptics frequently becomes futile. Abortion of a furuncle can sometimes be attained by first thoroughly cleansing the part and then applying Unna's carbolic-mercury plaster, or by injection with a 3 per cent. phenol solution.

For the second indication no method can, I think, approach in rapidity of cure the plan of thoroughly scooping out the necrotic core. Severe cases of pustular acne can be quickly and certainly cured only by following the same lines—*i.e.*, curetting or incising each pustule and carefully disinfecting its interior. This is very painful, and usually demands an anæsthetic, but its results cannot be equalled. It is both rational and successful. Where this method is not available for boils, then, with Veiel, I believe in the old-fashioned poultice, which, at will, may be prepared with a $\frac{1}{1000}$ solution of sublimate or a 4 per cent. solution of boric acid. At night the boil may be dressed with the carbolic-mercury plaster or with a boric acid paste (equal parts of vaseline and zinc oxide + 4 per cent. boric acid).

The third indication, which is an important one, is easily accomplished by thorough disinfection of the skin in the neighbourhood of the boils, especially over the seats of predilection, nape of neck, axilla, nates, &c.

In this mode a diabetic patient who, in nine months, had suffered from 160 boils was completely cured in seven weeks (Veiel). The greatest possible cleanliness must subsequently be observed as to habits, dress, and bedclothes, and the patient should keep his nails cut short and abstain from scratching.

Leloir gives a striking example which, perhaps, illustrates this point of contagiousness. A young man presented himself regularly every winter with a carbuncle or boil on his neck. At the first approach of cold he used to put on a great coat, the collar of which was dirty. This coat had belonged to his brother, who died of a carbuncle on the neck.

The fourth indication resolves itself into correcting any obvious

derangement of health, and putting the patient under the best possible conditions of hygiene.

In the theory of causation we have to allow for factors other than the mere presence or accumulation of microbes in the blood and tissues—*e.g.*, depression of vitality, general or local, the existence of local inflammation, the influence of cold, injury, and individual predisposition; and, in regard to treatment, we must not overlook the influence of the state of the blood—witness, diabetes and albuminuria—and the possible modifications of the soil that may be brought about by the state of the digestive organs, diet, and internal medicines (*cf.* Watson Cheyne, *loc cit.*, p. 68); but upon these points it will, I imagine, be conceded by all that our knowledge is very defective.

One drug only may be mentioned.

I have no faith in the reputed virtues of calcium sulphide, in the prophylaxis or treatment of furunculosis, acne, and suppurating glands, and would place it side by side with that ludicrous specimen of therapeutic empiricism—*viz.*, the treatment of amenorrhœa by pills of potassium permanganate.

ART. II.—*Acute Double Pneumonia successfully treated by Bleeding and Inhalation of Oxygen.*^a By GEORGE FOY, F.R.C.S.I.; Surgeon to the Whitworth Hospital, Drumcondra.

THE case I bring under notice is that of a man, twenty-four years of age, who was admitted into the Whitworth Hospital, Drumcondra, on the 6th of June, 1891, suffering from pneumonia.

The disease extended over the whole of the left lung and the posterior lobe of the right.

When seen the temperature was found to be 104·6°, the pulse 112, and the respirations 36. A quinine and acid mixture was prescribed, and some pounded ice; this latter he took greedily and enjoyed greatly.

On the morning of the 9th of June he was so ill that death seemed impending; his face was almost purple, and his heart was acting slowly and laboriously, so that its stoppage seemed near at hand. Something had to be promptly done to relieve venous congestion, and I bled the median cephalic vein and let blood to sixteen ounces. Immediately on the vein being cut a jet of

^a Read in the Section of Medicine of the Royal Academy of Medicine in Ireland, December 18, 1891.

ink-black blood shot some six feet off, and when the stream was caught in a vessel and kept for days it retained its dark colour, and neither buffed nor cupped. Before the bleeding was stopped the patient expressed the greatest relief, and his face lost its dusky hue; the pulse became soft and compressible, and the patient fell into a sound sleep, which lasted for six hours.

Such good results were very satisfactory, but they were not permanent; in two days all the good effects were gone, and the old symptoms of venous congestion returned, and the disease, now in its eighth day, was pursuing an unfavourable course. Ammonia was prescribed, and a plentiful allowance of Valentine's meat juice ordered. Towards evening of this day—his fifth in hospital—respirations were 64 in the minute, and he was unable to hawk up the sputum; the temperature had fallen to 103° , but I did not think the fall of temperature betokened other than danger.

He commenced to wander in his mind and pick at the bed-clothes. The greater part of his trouble was, I concluded, due to interference with the oxygenation of his blood, and as three-fourths of his respiratory space was functionally useless, I saw no way of oxidising his blood other than by increasing the amount in the air he breathed. By the aid of Mr. Turner, of Messrs. Fannin, of this city, I got a suitable apparatus, and on the evening of the 11th the patient commenced the inhalation of oxygen gas, which continued from 7 p.m. to 7 15 p.m. Gradually all the lividity of the face disappeared, and consciousness returned. On the inhalation being discontinued he slept for an hour.

Although the oxygen gas was driven directly into the mouth-piece, which was placed between the patient's molar teeth, no excitement but quiet followed its administration. At 10 30 p.m. the inhalation was repeated, and again during the night. For four days oxygen was administered every three hours for 15 minutes at a time.

On the morning of the 12th, at 10 a.m., the temperature was 100.8° , respirations 40, and the pulse 106. He expelled the sputum without difficulty, and was able to answer questions, but not to make any long statement. Oxygen was continued until all the more urgent symptoms disappeared; 33 feet in all having been given. Resolution set in and proceeded but slowly, and it was not until the 24th of August that the patient was discharged.

During convalescence the patient told me that on the night of the 2nd of June he travelled from Liverpool to Dublin on the deck

of a cattle boat. He was thinly clad, and when the vessel was about half-way he got a severe shivering fit, and on reaching Dublin he went straight to his lodgings and got into bed ; a warm jar was placed to his feet, extra clothes put on the bed, and a fire lit in the room, nevertheless he felt "stone cold," and shivered in bed. Warm drinks were given to him, and he got rid of the shivers, but got a violent headache, and during the night his landlady declared he was delirious. He was better the following day, but became again delirious at night, and remembers nothing more until he found himself in hospital.

My object in bringing the case forward is to call attention to two old-fashioned methods of treatment—bleeding and inhalation of oxygen.

Perhaps no therapeutic remedy ever had so much talent given to the investigation of its action as oxygen. Leonardo da Vinci, in his treatise on "Air and Flame," published about 1480, describes the necessity for the gas and tells of its anti-putrescent power. Mayow, 200 years later, performed his well-known experiment on a mouse with his "nitro-ærial" spirit, stating "that the igno-ærial particles absorbed in respiration are designed to change venous into arterial blood." His experiments were, in 1774, repeated by Lavoisier and by his pupil, Beddoes, the father of "Pneumatic Medicine." Priestley also experimented with his dephlogisticated air, and was so delighted with the results that he entertained the idea of purifying public assembly rooms by means of his newly-discovered gas. Fontana and that able physiologist, the Abbé Spallanzani, all became interested in the therapeutic possibilities of "nitro-ærial" or dephlogisticated gas. Ingen-Houzen, in 1782, found that after the inhalation of oxygen his sleep was sweeter and more refreshing than usual. Poulle, in 1785, laid down certain directions for its use, and describes the conditions calling for the use of the "Vital Air," in which treatise, which was published in Latin at Montpellier, he recommends the inhalation of the gas to "those asthmatics whose condition is not caused by excess of irritability ;" and further, "it is the grand resource in restoring to life asphyxiated persons. Finally, it will prolong the last moments of the aged by rekindling in them the fire of life about to be extinguished." In a prize essay submitted to the Medical Society of Paris, in the Year of Liberty, on the therapeutic value of "Vital Air," he records the benefit a lady of thirty-one years of age, suffering from consumption, derived from its use.

Time does not allow of a chronological statement of the many medicinal uses to which oxygen gas was applied ; but I may mention that Dumas, in 1792, declared that its inhalation in phthisis was baneful, and performed some experiments on dogs which appear to support his views. "I think I can set forth," said he, "founded on experiments, that the continued use of such an air would start in the lungs that degree of lively irritation which sometimes leads to a tuberculous or ulcerous state, of which that disease is the necessary consequence." We should not, however, forget that Dumas in his experiments used oxygen obtained from oxide of mercury, the impurity and danger of which was pointed out by Priestley. Beddoes adopted the views of Dumas on the action of oxygen in phthisis, and he treated the disease with sub-oxygenated air, and he supported his theory by the statement that pregnancy arrested phthisis; and he asserted that the blood of pregnant women is deficient in oxygen. Reasoning from these grounds, Beddoes, in his pneumatic hospital at Clifton, confined phthisical patients to rooms in which by charging the chamber with hydrogen gas he produced an atmosphere deficient in oxygen. The Hotwells Hospital became famous for its treatment of palsy, epilepsy, asthma, chlorosis, hysteria, typhus, dyspepsia, and even leprosy, by the pneumatic process.

The staff was enthusiastic in praise of the method, and their labours were apportioned thus:—Mr. Watts attended to the apparatus; Mr. Davy prepared the factitious airs; and Dr. Beddoes took charge of the patients. The patients were directed to take "the point of the faucet between the lips, inhaling from the bag through the mouth, and to expel the air from the lungs through the nostrils, which operation most patients readily acquire a habit of performing with ease." The reputation of factitious airs in almost every form of disease was heightened by the publication by Dr. Beddoes of letters from Drs. Thornton, Cross, Barr, Carmichael, Pearson, and others, all lauding the new remedy; and in 1795 Mr. James Watt published a tract on the subject.

The first use of oxygen gas in this country of which I can find mention is that of Dr. R. Reid, who read a paper before the Association of the Fellows and Licentiates of the King and Queen's College of Physicians in Ireland on the 7th of July, 1817, entitled "The Use of Oxygen Gas in Angina Pectoris," which appears in the first volume of the Transactions of the Association.

Gradually the remedy fell into disfavour; probably the impurities

that were present in all specimens of the gas prior to its being prepared from atmospheric air had much to do with its being laid aside. Within the last few years, however, the gas is coming to be largely used as a therapeutic agent of undoubted value; and since MM. Brin have succeeded in producing a perfectly pure oxygen the remedy can be easily tested and its merits decided. Cobell, in 1874, published a series of interesting and valuable articles on oxygen as a remedy in disease, in the *Virginia Medical Monthly*. And Dr. Goolden, of St. Thomas's Hospital (*Lancet*, Oct. 25th, 1879), found that oxygen gas promoted the healing of a sloughing ulcer of the throat. Dr. Francisco Valenzuela, of Madrid, in a paper before the Academia Médico-Quirurgica, in May, 1887, stated, as the result of a number of experiments made by him on rabbits to determine the effects of oxygen of high tension on the animal organisation, that he found it invariably to lower pyrexial temperature.

The Council of Municipal Hygiene of Paris, in June, 1888, directed Dr. Voisin to draw up a code of instructions for the administration of oxygen gas to the asphyxiated. Not long since the *Medical Press and Circular* reported the successful administration of the gas to a man who was asphyxiated from carburetted hydrogen gas.

In my book on Anæsthetics, I have recommended the gas as a remedy in anæsthetic narcosis. The therapeutic use of the gas is being tried in every country and for the great majority of diseases; but its value in pneumonia seems not to have attracted much attention, as may be seen by consulting Neale's Digest. Dr. John Chambers has, in the *Lancet*, reported favourably of its use in a severe case of pneumonia—indeed he ascribes the patient's recovery to its use; and his is the only British case I can find a report of.

Abroad it has been generally used for pulmonary diseases. Amongst the warmest advocates for its use are Wallian, of New York, whose numerous papers on the subject are summarised in Sajous' Universal Medical Annuals for 1888, 1889, 1890, and 1891, and Dr. W. G. Thompson, whose paper is noticed in Cassell's Year Book for 1890, and in Sajous' great work.

No matter what theory we may accept of the pathology of pneumonia, I think we cannot go far astray in employing Nature's antiseptic—an innoxious agent, and the one of all others most suited for the aeration of the blood and the oxidising of the broken-down tissues, and so facilitating their elimination by the kidneys. And not the least of its benefits is that of giving sleep to the worn-out patient—natural, refreshing sleep.

ART. III.—*Diseases of the Fallopian Tubes and their Treatment.*^a

By THOMAS MORE MADDEN, M.D., F.R.C.S. Ed.; Obstetric Physician and Gynæcologist, Mater Misericordiæ Hospital, Dublin.

THE differential diagnosis and successful or radical treatment of Fallopian tube diseases have only become obtainable within a recent period; and for that advance we are largely indebted to the teaching and practice of Mr. Lawson Tait and some other leaders of the modern school of abdominal surgery. Nevertheless, it may not be superfluous to remind you of the somewhat generally ignored fact that the disorders of the uterine appendages were by no means unfamiliar to many of the older writers, by whom, and more especially by Astruc,^a of Paris, in 1761, and by Kruger,^b of Gottingen, in 1782, their pathology was fully discussed; whilst by others very remarkable instances of what we now term pyo-salpinx, and hydro-salpinx, as well as other tubal troubles, have been narrated. Thus Portal^c quotes, *inter alia*, a case from De Haen of “abscess in the left Fallopian tube which contained eighteen pints of pus;” and another from Muniëks of “an enormous Fallopian cystic tumour, the contents of which were estimated at upwards of a hundred gallons”! He also cites from Harden the instance of “a woman in one of whose Fallopian tubes was found encysted a hundred and forty pounds of an aqueous fluid”! These or other cases of Fallopian disease were also referred to by Bailey,^d Hooper,^e and other writers of the first two decades of this century, and above all, a little later, by Dr. Davis,^f by whom the symptoms and pathology of diseases of the oviducts as then understood were distinctly described in 1835. From that time may be dated the general recognition of the fact that the Fallopian tubes, being so intimately connected as they are structurally and functionally with the uterus, must necessarily be therefore liable to inflammatory diseases similar to those which affect that organ, however modified these may be in their symptoms and consequence by the special organisation and relations of the oviducts.

^a Astruc. *Traité des Maladies des Femmes*. Paris. 1761.

^b Kruger. *Pathologia Ovariorum Muliebrum*. Gott. 1782.

^c Portal. *Cours de Anatomie Médicale*. Tome V., p. 540.

^d Bailey. *Diseases of the Uterus, &c.* P. 504.

^e Hooper. *Morbid Anatomy of the Human Uterus*. P. 3.

^f Davis. *Obstetric Medicine and Diseases of Womb*. Vol. II., p. 760. 1835.

The diseases which may be thus transmitted to the Fallopian tube not only from its uterine orifice but also through its free peritoneal extremity, or which may originate within its structure, are, firstly, inflammation, or salpingitis, and its consequences—viz., pyo- and hydro-salpinx—of which probably the most common causes are gonorrhœal infection and puerperal sepsis. Besides these the oviduct may, moreover, be the seat of encysted, fibromuscular, and malignant tumours.

Acute Salpingitis.—Acute inflammation of the Fallopian tubes may be here very briefly disposed of, inasmuch as salpingitis is seldom brought under gynæcological notice until the disease has reached the chronic stage. It is most frequently observed attending the puerperal state as a complication or consequence of septicæmia, when its occurrence is indicated by deep-seated, throbbing pain, extending from the iliac region into the groins and thighs, together with local tumefaction and tenderness, recognisable by conjoint recto-abdominal or bimanual examination over the course of the broad ligaments, in which the tortuous outlines of the hyperæmic and enlarged oviducts may be thus detected. The most common result of acute salpingitis is the chronic form of the disease. It may, however, also terminate in resolution or cure, as well as in the occlusion or obliteration of the ducts in any part of their course by the cohesion of their walls from plastic inflammatory exudations. As to the treatment of such cases, I know of nothing very reliable that can be recommended beyond allaying pain by opiates and administering quinine in combination with iodide of potassium or bichloride of mercury. Hot water vaginal, and rectal, irrigation and external stuping are obviously indicated, and are most likely to prove successful in acute catarrhal salpingitis, whilst it is difficult to see what possible benefit can be produced by counter-irritation by blisters or strong mercurial ointment over the inguinal region, which though still occasionally employed in such cases, are more likely to add to the discomfort of the patient than to cure the disease.

Chronic Salpingitis may affect either one or both tubes; more generally both are implicated, although in different degrees. Its extrinsic causes may be either gonorrhœal, puerperal, or catarrhal, whilst occasionally it may arise from local causes, such as tubercular and cancerous deposits in the tubes. Moreover, as might be expected, salpingitis and its consequences are more frequently met with during the earlier period of marital life, and in those in

whom the utero-ovarian or sexual functions have been most exercised, than in patients more advanced in years and of non-erotic temperament. Thus Dr. Bland Sutton, who in his pathological investigations has had an extensive opportunity of examining the bodies of a large number of women of ill-fame, in most of these instances discovered evidences of hyo- or pyo-salpinx, or in some cases found one or both Fallopian tubes represented by an impervious cord and the ovaries atrophied and unrecognisable. This induces him to believe that the frequency of tubal disease between the age of twenty and thirty-five years and its relative rarity after the fortieth year is to be accounted for by the fact that, if the individual survive the dangers incident to an inflamed and distended tube, the diseased parts atrophy.

Symptoms of Chronic Salpingitis.—The general symptoms of chronic salpingitis, before the disease has eventuated in pyo- or hydro-salpinx, are scarcely distinguishable from those of the generally co-existing oöphoritis, and, later on, its effects and evidences are symptomatically almost identical with those of pelvic cellulitis or perimetritis, and in former days were commonly confounded with that disease. Of these symptoms of chronic tubal disease the most important are the recurrence of otherwise unaccounted for, and generally unrelievable by ordinary treatment, attacks of menorrhagia attended with dysmenorrhœa, or impeded through protracted or excessive menstruation. In such cases the patient further complains of a characteristic deep-seated, intra-pelvic pain which—in some instances from the first, and in almost all cases during the progress of the disease—sooner or later becomes acute or lancinating, shooting out into the sacral and inguinal regions, and extending down the thighs. At the same time may be also noted evidences of constitutional febrile disturbance and pyogenic rigors, and in some cases intra-menstrual hæmorrhages or aqueous discharges from the uterus, together with local tumefaction and tenderness in the course of the oviduct discoverable on examination per rectum.

The Pathology of Pyo- and Hydro-Salpinx has recently been fully investigated by a distinguished pathologist, Dr. Bland Sutton, and I cannot do better in this connection than place before you the following abstract of his observations on this subject, which may be found *in extenso* in the *Lancet* of December 6, last year:—

“*Pyo-Salpinx.*—In severe cases of salpingitis after occlusion of the abdominal ostium, accompanied, as is usual, with stricture of

the uterine end of the tube," the pus, says Dr. Bland Sutton, "is as securely locked up in the tube as it would be in a deep-seated abscess, and it follows the course of an abscess. The walls of the tube, stretched by the accumulating pus, gradually thin, and the inflamed tube becomes adherent to surrounding structures—ovary, uterus, rectum, intestine or broad ligament. The wall of the tube continues to thin until, on some slight exertion, it bursts. If the pus be discharged into the peritoneal cavity, it establishes rapidly fatal infective peritonitis. Right pyo-salpinx is very prone to open into the rectum. When a pyo-salpinx lies in contact with bowel, the pus it contains becomes abominably foetid, due to osmosis of the intestinal gases. The relation of pyo-salpinx to the rectum must be studied in connection with tubo-ovarian abscess. The first effect of salpingitis upon the ovary is to cause thickening of its capsule, and if lymph is effused upon its surface this may organise and extensive perimetritic adhesions result. The effects of this thickening of the capsule are twofold. At first it prevents the rupture of ripe ovarian follicles, and the tension gives rise to considerable disturbance and causes pain; and as the enlarged follicles cannot discharge their contents, it naturally follows that on section an ovary which has long been the seat of peri-oöphoritis will be found largely converted into cystic spaces, and two or more may become confluent and form a cyst the size of a walnut. As such a cyst enlarges and makes its way by absorption to the surface, it not infrequently comes into relation with and adheres to the dilated pus-containing ampulla of the corresponding tube, which has been brought in contact with it through the restraining influence of the tubo-ovarian ligament. Not infrequently absorption takes place, and the dilated ampulla of the tube will communicate with an enlarged follicle or cyst in the ovary, and thus give rise to a tubo-ovarian abscess, which may be discharged by way of the rectum at irregular intervals."

When the infective qualities of pus are not great a pyo-salpinx gives rise to few symptoms. It is this form of pyo-salpinx that, as Dr. Sutton believes, becoming gradually dilated with fluid, is eventually converted into a hydrosalpinx, which, as a rule, may be regarded as merely a late stage of pyo-salpinx.

Many milder attacks, however, may be described as "catarrh of the tube," and like a nasal or gastric catarrh subside and leave no trace. If the inflammation is sufficiently intense to seal the ostium permanent damage results, and if, as is so commonly the

case, both tubes are affected, they remain throughout life functionless, and often a source of grave danger. In cases of salpingitis sufficiently severe to occlude the ostium the tube is, after the subsidence of the inflammation, in the condition of a blocked ureter; there is no escape for the fluid which is excreted by the glands in its walls, or for the fluid which passively exudes into its cavity. It consequently forms a cyst by retention. The fluid is either colourless or greenish owing to the presence of cholesterin.

In some instances the fluid, as before stated, may escape at irregular intervals through the uterus, constituting what has been described as "*hydrops tubæ profluoris*," and which is accounted for by Dr. Sutton as resulting from the occurrence of Fallopian fistula in such cases. In other instances, again, the exudation may take place through the abdominal ostium of the tube, possibly giving rise to fatal peritonitis, or in non-septic cases to "*hydro-peritoneum*," which has been defined by Mr. Alban Doran as a collection of fluid in the peritoneal cavity that cannot be referred to any tangible organic disease, except chronic salpingitis of a mild type with an unobstructed tube.

Before referring to the treatment of these conditions, I shall in the first place briefly recapitulate the excellent notes taken by my clinical resident, Mr. Whyte, of a case of chronic salpingitis, which may serve to exemplify the ordinary course and results of that disease:—

CASE.—A. O'N., aged twenty-four, unmarried, an anæmic-looking draper's assistant, admitted October 17th, suffering from menorrhagia for two years previously. The changes, she stated, lasted from six to eight days, and were accompanied by much suffering. She also complained of almost continual pain in left groin and backache, together with a bearing-down sensation.

On vaginal examination the position of the uterus proved normal, and nothing beyond some slight endo-cervicitis being apparent except an unusual flattening of the roof of the vaginal posterior *cul-de-sac*. An examination by the rectum was made, on which distinct fulness and fluctuation was discovered in Fallopian tube, which was much enlarged. The aspirator was employed, and a long needle was passed through vaginal *cul-de-sac* and guided by finger *in situ* to most prominent part of tumefaction, at which it was introduced, and on turning the tap about six ounces of turbid puro-serous fluid was evacuated. No subsequent dressing was employed; the vagina and uterus both daily irrigated with hot water. She was put on iodide of potassium and bark mixture. Rapidly convalesced, and was discharged on December 9th.

Treatment.—In the treatment of chronic salpingitis and the resulting pyo- or hydro-salpinx, it appears to be not unfrequently lost sight of, that in these, as in all other cases, the gynæcologist should set before him not only the removal of disease, but also the restoration of the functional and structural integrity of the affected organ, as far as these objects can possibly be combined and accomplished, and that only where the latter is impracticable, should he be content with the former. With this view several methods of dealing with the cases now under consideration have been suggested—viz., firstly, the removal of the contents, whether purulent or serous, of the distended tube by aspiration, as recommended by Dr. Routh, and some years ago by myself in papers read before meetings of the Royal Academy of Medicine in Ireland, the Brighton meeting of the British Medical Association, as well as at the Washington meeting of the International Medical Congress, in which I also discussed the expediency and showed the possibility of catheterisation of the Fallopian tubes in certain exceptional instances. Secondly, by free incision per vaginam, and subsequent washing out of the emptied tubes, as advocated by Dr. Sinclair. Thirdly, curetting the endometrium around the uterine ostium of the tube, and Emmet's operation. Fourthly, employment of electricity by the method of Apostoli; and, fifthly, by what may be termed conservative laparotomy—i.e., abdominal section with the view either of aspiration of the distended ducts, or, as advocated by Mr. Alban Doran in some instances, for the purpose of breaking down adhesions and “freeing the diseased appendages.” Sixthly, may be here mentioned the resection of the tube by salpingotomy or Skutsch's operation. Seventhly and lastly, in this connection is massage as employed by Brandt in these cases.

I shall not here waste time by referring in extent to any of these procedures, save those that I have myself proved the practical utility of. This is not the case with regard to salpingotomy, concerning which, as well as other “fancy operations” that may more safely be demonstrated on a lecturer's diagrams than in a patient's body, I would re-echo Dr. Goodell's criticism—“The diseased parts cannot be handled in abdominal section without great risk. The tube is often tensely distended, and adhesion to neighbouring structures are usually intimate. Hence the tube may carefully be ruptured, intestines torn, and circumscribed collections of pus diffused.” As to massage, even if harmless, it would be objectionable for the general reasons I have mentioned when referring to this subject in a pre-

vious lecture. But in cases such as those under consideration, even that negative merit can hardly, I think, be attached to a procedure such as that by which, according to the writer just cited, one of its advocates—viz., Brandt—is credited with venturing to attempt the emptying of a distended tube into the uterus by “rolling it gently between the fingers of both hands,” a manœuvre which, it is admitted, often causes “an escape of secretion into the peritoneal cavity, which readily gives rise to symptoms of peritonitis!”

Turning from these fond fancies of transcendental scientists or enthusiastic fadists to the sober realities of practical gynæcology, we may now consider the rational treatment of pyo- and hydro-salpinx, in regard to which there appears to me no reason to depart from the traditionally recognised first principles of surgery, by an indiscriminate resort, in the first instance at least, to such heroic operative measures as the complete extirpation of the uterine appendages. If the mammary gland, for example, becomes the seat of a purulent collection, or if, as Sir Spencer Wells suggests, the tunica vaginalis testis is the location of a hydrocele, would it not be more advisable to open the abscess or to tap the hydrocele than to amputate the breast or to remove the affected testicle? And must we then necessarily adopt an entirely different course as a matter of general practice in dealing with analogous conditions in other no less important organs?

Acting on these principles, therefore, for several years past, I have, in the first instance at least, treated a considerable number of cases of pyo- and hydro-salpinx by aspiration and other conservative measures. The successful results thus obtainable in many, though by no means in all, instances of this kind have been proved in my wards in the Mater Misericordiæ Hospital. The majority of cases of this kind were there treated by that method, to which I have elsewhere referred, before its advantages were recognised. This treatment, even if not as certain in its radical curative results as salpingotomy, is certainly quite as successful in that class of cases to which its employment should be restricted, and at least contrasts favourably as far as facility of performance and safety from danger with the latter operation which in other cases or after its failure may become no less expedient. Hence I shall venture for an instant to dwell on the details of the less serious method, which, as I believe, will in not a few instances be found to afford satisfactory results whenever tubal collections are accessible per vaginam. In the first place, to permit the necessary manipulation,

the patient should be put under some anæsthetic and placed in the ordinary left lateral gynæcological position. Then the operator introduces the index and first fingers of his left hand through the sphincter ani upwards and forwards along the outlines of the posterior uterine wall, the fundus being pressed down by his assistant's hand over the hypogastrium. In this way the tubes and ovaries can be readily palpated, and if there be any inflammatory or cystic enlargement of the former it may be distinctly recognised as a tortuous, elongated, or sausage-shaped or rounded fluctuating tumour, extending, as Dr. Wm. Duncan says, "from the side of the uterus outwards to the broad ligament and backwards into Douglas's fossa." Having thus ascertained the position of the pyo- or hydro-salpinx, the next step is to carefully introduce per vaginam on the point of the right index finger a long fine needle affixed to the aspirator up to the roof of the posterior vaginal *cul-de-sac*, through which it is to be passed into the retro-vaginal fossa, and thence guided by the operator's left index from the rectum up to the most prominent presenting part of the tubal swelling, into which it is to be plunged. The tap of the aspirator is then to be turned, so as to give exit to the contents of the dilated tube, the expulsion of which may be assisted by the steady pressure of the assistant's hand from about the hypogastrium down into the pelvic cavity, and continued until the tube is completely evacuated. After this the vagina should be rendered aseptic by insufflation with iodoform, and then no further local treatment beyond hot water irrigation will generally be required, unless the tube should, as sometimes happens, again fill, though probably to a lesser extent, when the same procedure may be again and again, if necessary, repeated until the oviduct has become reduced to its normal size.

Curetting Fundal Orifice of Tubes; Treatment by Electricity.— Apart from malignant and other degenerative changes, the most common immediate cause of cystic accumulations in cases of chronic salpingitis is mechanical obstruction of the uterine orifice of the oviduct, due either to chronic follicular endometritis, flexion, or, in some instances, supra-involution of the uterus. Under such circumstances the tubal obstruction is most likely to be relieved by dilatation followed by curetting of the diseased proliferating endometrium in the first instance, or by the rectification of the flexion in the second, and by faradisation in the last-named cases. The faradic current has, moreover, not only in these, but also in other forms of chronic salpingo-oöphoritis, been in some instances suc-

cessfully employed by Dr. Apostoli, of Paris, who generally employs in such cases the faradic current of tension applied in moderate doses and for only a few minutes at a time, for which he claims the most remarkable curative results in such cases. Another recent authority on this subject—Dr. Milne Edwards, of Edinburgh, does not believe, however, that the galvanic current is suited to cases where there is definite organic change in the ovaries, but considers that here faradism may possibly be of service.

Removal of Uterine Appendages.—In those graver and, as I hope may yet be found by others of higher authority than myself, somewhat more exceptional cases than is generally supposed, in which, from the extent of Fallopian disease, or from the implication in its course of adjoining structures, the urgency of the symptoms attending its progress or other causes, it becomes impossible to deal satisfactorily or safely with such cases by the methods already referred to, and in which more active surgical intervention is obviously indicated, there then only remains for our adoption the complete removal of the uterine appendages.

That operation has, however, now come into vogue under other circumstances than these, being supported by a large number of modern gynæcologists, as not only the most efficient, but also, in the cases in which it is required, the safest method of dealing with the tubal diseases referred to; and hence the procedure which should be generally adopted in such cases. This doctrine I cannot, myself, altogether unreservedly accept, believing, as I do, that in some instances the results of salpingitis are curable without any active treatment, and that in other cases they are amenable to the minor measures I have described. Nevertheless, in this hospital and elsewhere I have met with cases in which the only apparent alternatives were either the speedy death of the patient from Fallopian-tube disease or else the complete removal of the affected appendages, by what is generally known as “Tait’s operation,” after the name of the distinguished surgeon by whom it was introduced, and has been most successfully carried out in this country. In the following observations I shall therefore very briefly describe that operation, or, at least, that method of performing it which you have here seen practised, premising that, regarding, as I still do, the ovaries and tubes as both essential factors in the menstrual function, it follows that when the latter are removed, with salpingotomy should also be combined oöphorectomy, to obviate the possible consequences of an abortive or abnormally-accomplished

process of ovulation. Nearly all the preliminary successive steps of this procedure being identical with those of ovariectomy, I shall merely allude to those points in which these operations may be contrasted. The first and most obvious of these is the smaller size of the abdominal wound required for removal of the appendages. This incision should only be just sufficient to allow the introduction of the two first fingers of the operator's left hand, which should be passed down to the fundus uteri, by the position of which he will be readily guided to the contiguous tubes and to the ovaries. In such cases the often widely-distended oviduct must be most tenderly handled to avoid extravasation into the peritoneal cavity of a pyo- or hydro-salpinx, which may occasionally be prevented by aspiration of the diseased tube before any attempt to draw it out through the abdominal wound, as must be the next step in this operation when not rendered impossible by extensive inflammatory adhesions. Having thus drawn out, as far as can be safely done, the affected tube and ovary, so as to form a kind of pedicle from the broad ligament, through the centre of which, carefully avoiding injury to blood-vessels as far as possible in so doing, a blunt-pointed needle carrying a double ligature of stout silk is to be passed. This ligature may next be secured by an ordinary "reef knot," which I have found sufficiently reliable and easier to make than it would be for me to acquire the probably still better "Staffordshire knot," the use of which has been thus described by Dr. Macnaughton Jones:—"A loop of double ligature is passed through the centre of the broad ligament, avoiding the vessels. The loop is then turned back so as to include both the ovary and tubes in the two loops thus formed. One free end is then passed through the returned loop; both ends are now drawn together and then cut off." Whatever ligature be employed it should secure the pedicle, from which the ovary and oviduct are next to be separated by a blunt scissors curved on the flat, a little above the point of ligation, which may be then dropped back into the peritoneal cavity. A similar procedure may then be adopted with regard to the remaining ovary and tube, after which the abdominal cavity may be washed out with warm water, the wound closed, and the case treated on the same general principles as an ordinary ovariectomy.

This operation, although under ordinary circumstances feasible enough to any surgeon, is occasionally, however, one that might puzzle the most dexterous specialist to carry into effect. The

difficulty of removing a Fallopian tube that may possibly be distended to the point of bursting by a pyo-salpinx, without risk in so doing of rupturing the thin tensely-stretched walls of the purulent sac into the peritoneal cavity, is obvious. But where, moreover, as occasionally happens in such cases, the ovaries and tubes are matted together, and to the ligaments, uterus, and other adjoining structures in one inextricable mass by inflammatory exudations and adhesions, that difficulty may be converted into an impossibility in some instances. I have myself had occasion to remove the uterine appendages in several cases, and, as I believe, have generally obtained results neither better nor worse than the average of other ordinary gynæcologists. But, at the same time, I think it not improbable that such other practitioners as well as myself may have sometimes regretted that they had not either operated earlier or that they operated at all in those exceptionally unpromising cases to which I have just referred.

The immediately successful results now obtained from the removal of the uterine appendages in the majority of cases, and the very small mortality consequent on its performance in suitable cases in the hands of skilled specialists, has been proved beyond any possibility of question by the statistics of Mr. Tait's vast series of cases, as well as by those of Dr. Bantock and many other eminent surgeons. Of the ultimate curative results of removal of the uterine adnexa, however, a less hopeful view is taken by some authorities whose opinions on this subject are no less entitled to consideration. Thus Mr. Alban Doran observes:—"As a rule, oöphorectomy for chronic disease of the appendages is followed by speedy convalescence. Unfortunately, a permanent cure is not so frequent. Mental symptoms occasionally follow double oöphorectomy. The cases where the stump suppurates are particularly unsatisfactory. Fistulous tracts open, close, and re-open in the abdominal wound for months, discharging thin pus. Such cases find their way to the consulting rooms of others, or to other hospitals than the institution where the operation was performed. The operator hears no more of them, and he or the hospital registrar records them in perfect good faith as 'cures.' A larger minority suffer from a continuance of the pains which preceded the operation, probably on account of intestinal adhesions, or through irremovable inflammatory products which press on nerves. The ligatures certainly set up trouble in some cases."^a

^a Alban Doran, F.R.C.S., "On Treatment of Chronic Diseases of Uterine Appendages" in the *Lancet*, January 17, 1891.

Somewhat similar views have been previously expressed by other writers. Thus Dr. H. C. Coe, in the Proceedings of the New York Academy of Medicine, observed:—"There are not a few women now attending the various clinics in New York who have had their ovaries and tubes removed, and yet who complain of precisely the same pain as before; in fact, I can recall cases in which, although the menstrual disturbance is wanting, the pain is more severe than it was before."

I, therefore, think that, without in any way questioning the necessity for these operations in many instances, or the success and small mortality which has attended their performance in the hands of a few distinguished surgeons, the great body of medical practitioners who occasionally must meet and deal with cases of Fallopian tube disease, should be very slow to adopt operations the success of which can only be assured by exceptional skill, and that even where the circumstances of the case preclude the possibility of transferring the responsibility to those possessing that capacity, they should, before attempting to imitate their practice, at least fairly and fully try the less heroic but yet often successful methods of treatment to which I have already alluded. I have recently had clinical reason to know that the repetition of this recommendation is not superfluous at the present time, having in this hospital within the past couple of sessions met with the effects of its disregard.

A few years ago I brought the increasing frequency in general surgical practice of operations for the removal of the uterine appendages, and by no means only when rendered necessary by Fallopian disease, or for uterine myoma, under consideration in papers read before the Obstetric Section of the British Medical Association and elsewhere, to which I have already referred. And as the general accuracy of my opinions on this subject has been confirmed by my more recent experience, I may here recapitulate the views I then expressed, and still hold.

I fully recognise the fact that the first duty of the surgeon is to save his patient's life; and, therefore, if in a case of Fallopian tube, or other, disease, this can only be done by immediate removal of the uterine appendages, that this operation should then be at once resorted to. But under any other circumstances it should never be lost sight of that the uterine appendages are as essential to reproductive capacity in women, as are the testes in men, and that by their complete removal the patient is practically unsexed or incapacitated for the chief function and primary object of woman's married

life. Nor does it seem to me ever justifiable to perform such operations without the patient's full concurrence and knowledge of the consequences—a rule the propriety of which is obvious, and is now generally recognised and acted on. At the same time, however, it appears to me that the removal of the ovaries and Fallopian tubes is even yet occasionally somewhat too readily resorted to in non-organic disease as a possible means of benefiting neurotic and hysterical symptoms. It may, therefore, be well to repeat that other operations and methods of treatment have ere this been for a time as generally accepted; and then, having perhaps been carried beyond their judicious application, have fallen into desuetude. We have, therefore, no guarantee in the present frequency of resort to the removal of the uterine appendages that the same may not in course of time happen also with regard to these operations which, unquestionably valuable and successful as they have proved in the hands of some eminent surgeons, in cases of absolute necessity should, in my humble judgment, never be lightly regarded as measures of election.

The question of election or necessity I regard as the cardinal point to be decided in considering the expediency of removing the uterine adnexa in the treatment of Fallopian tube disease. In many instances, unquestionably, as I have already said, that course becomes an unavoidable necessity, and is then the obvious duty of the surgeon. It should never be forgotten, also, that in probably a no less large number of cases tubal diseases may be successfully treated by the much less heroic, but remedial and conservative, measures to which I have referred.

POISONING BY THE EXTERNAL APPLICATION OF TOBACCO.

THE following case of poisoning by the external application of the infusion of tobacco was reported in the *Journal de Médecine de Bordeaux*:—A young man suffering from pediculi pubis determined to kill the vermin by sponging his skin with an infusion of tobacco. He boiled 200 grammes of tobacco in 2 litres of water; with this he sponged himself freely, and in a short time repeated the application. Two hours afterwards he felt a dull heavy sensation in his head, followed by vertigo, blindness, and vomiting. He had cold sweats, cold purple-coloured extremities, and his mind began to wander. His respirations were diminished and he spoke with difficulty; the heart was very feeble and the pulse hardly discernible; the limbs were unsteady and tremulous on movement.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

RECENT WORKS ON LARYNGOLOGY.

1. *Transactions of the Twelfth Annual Meeting of the American Laryngological Association.* May, 1890. New York : D. Appleton & Co. 1891. Pp. 131.

2. *Diseases of the Nose.* By SPENCER WATSON, F. R. C. S. Eng., &c. London : H. K. Lewis. 1890. Second Edition. Pp. 312.

1. THE volume of Transactions of the Twelfth Annual Meeting of the American Laryngological Association contains seventeen papers, with full reports of discussions thereon. These transactions are well worthy of the attention of those taking especial interest in such matters ; and some of the papers contain information useful to the general practitioner. Frank Donaldson, M.D., contributes a most interesting "Historical Review" of the laryngology of Trousseau and Horace Green, dealing with the period "anterior to Garcia's successful inspection of the larynx." The writer points out that Trousseau considered that the epiglottis formed an insuperable impediment to a view of the interior of the larynx ; and his treatment consisted in applying solutions of nitrate of silver, injected by curved silver tubes passed behind the epiglottis.

Horace Green in 1846, by expert manipulation, succeeded in passing, by a probang, solutions of nitrate of silver into the larynx. A committee of the Medical and Surgical Society of New York condemned this practice, and publicly denied the possibility of cauterising the interior of the larynx ; but Green triumphantly demonstrated his method in the case of a man who had attempted suicide by cutting his throat, and in whom the opening in the trachea had never healed.

H. L. Swain, M.D., has a careful paper on adenoid tissue in the naso-pharynx and pharynx, in which he describes the development of this tissue, and cites facts in comparative anatomy in relation to its occurrence otherwise than in man. The

writer discusses various theories as to the probable purpose of these structures, and cites the views (1) of Killian, who considers that their function is to destroy micro-organisms by the multitude of leucocytes present in them; (2) of Spicer, Fox, Schmit, and Stöhr, that they take part in the production of blood; and (3) of Davidoff, who considers that they assist in carrying some altered food into the system.

Dr. Swain himself inclines towards Killian's views.

One of the best papers in the volume is that of S. W. Langmaid, M.D., on Hoarseness and Loss of Voice, caused by wrong vocal method, in which he rightly inveighs against the evil effects of insisting, as many teachers of singing do, on the tongue being depressed and flattened during the production of *all* vocal sounds; he shows that this, when insisted on, tends to produce serious and unnatural strain on the laryngeal muscles, which often ruins the voice.

A long discussion on the various methods of operation used for the correction of deviations of the nasal septum is reported, the outcome of which seemed to be in the direction of more or less disappointment with results in such cases.

On reading these transactions it is very clear that American specialists are at least not behind in knowledge and resource.

2. The first edition of Mr. Spencer Watson's work on "Diseases of the Nose" was published in 1875, and remained for many years almost the only book on the subject available for English readers; and one is almost inclined to doubt the wisdom of the writer in not retaining his honourable position of a pioneer in a branch of medical work which has recently undergone a wonderful development, and has become generally recognised as possessing much importance in its bearing on various affections of other organs. By bringing before the profession a second edition the writer lays himself open to, on the one hand, a comparison which can scarcely be considered favourable with such a work as Bosworth's fine and exhaustive volume on the same subject lately noticed in this journal, and, on the other, to ignoble competition with the many—the very much too many—productions compiled by juvenile aspirants for the fees of a confiding public, whose lack of experience and judgment are only surpassed by their cool assurance in posing as authorities on matters, on many of which they must necessarily be incapable of forming

an opinion which could compare in value with the often very excellent paper on which it is printed. Therefore, we think that our author might have been better advised had he rested on the laurels which he so well won as a very early worker in this important field.

The book has been almost rewritten. This, of course, was a necessity. Many sections are entirely new, and much of the matter contained in the first edition has been omitted. The entire work, so far as it goes, is up to date, and we have the great advantage of Mr. Watson's calm and judicial conclusions on several subjects on which wild and untenable views have been broached, and very diverse opinions held, as, for example, in Section XVI., on Reflex Neuroses, p. 292.

The first section deals with the anatomy and physiology of the nose. It is unequal. There is a full description of the nasal mucous membrane, as regards its variations in the nasal and accessory cavities, and its histology; but the turbinates are curtly dismissed in a few lines, and with merely a passing reference to their erectile tissue—no mention being made of Zuckerkandl's important researches.

In Section II. is a description of the methods and appliances necessary for examination of the cavities of the nose and of the instruments required for treatment.

At p. 34, among "preliminary remarks on nasal stenosis," we fail to find any mention of turgescence of "the vascular membrane over the turbinated bones" due to vaso-motor troubles—a condition very important both from the pathological and practical side—the only causes mentioned are "temporary (as in catarrh) or permanent (as in chronic hypertrophy)."

At p. 47 is a short paragraph which it would be a pity to overlook. It shows an excellent sense of dry humour on the part of our author; in reference to the treatment of acute nasal catarrh, after giving details of several methods, he says:—"Many other remedies besides those enumerated above have been extolled as efficacious, and the difficulty of choosing from among them is therefore great." He then continues—"Multiplicity of remedies in this, as in other diseases, implies either a tendency to spontaneous recovery without remedies, or a doubtful efficacy of many of the remedies themselves." This is rather hard on Messrs. Sidney Ringer (aconite), Hagner (his "Olfactory"), Ferrier (his "Snuff"), J. Moure (his "Snuff" also), not to mention

other remedies recommended by bearers of less-known names. At the risk of appearing optimistic we may say that we have found that, at least, much temporary relief—often welcome during and after meals, or at night—may be obtained from using, either as spray or by simply sniffing, a small quantity of a lotion composed of equal quantities of hazeline, glycerine of borax, and a 6 per cent. solution of cocaïn.

We are quite in accord with Mr. Watson as to the scrofulous taint favouring the occurrence of hypertrophic rhinitis, although this view is not universally held by writers of authority on the subject. We also agree with him in his opinion that the electric cautery is “the most rapid, less painful, and more effectual” method of dealing with the hypertrophied tissues in this affection; in the milder cases we have obtained good results by the use of plugs of cotton coated with equal parts of glycerine and lin. iodi, a mode of treatment which is not mentioned by the author.

In the section on gelatinous polypi the operative methods now generally used are well described. We do not observe, however, that any mention is made of a method which we have found very useful in cases where, for any reason, the ordinary practice of snaring, &c., is not advisable—viz., the injection into the substance of the growth of strong astringent solutions, such as a saturated solution of tannic acid or solution of iron alum; some excellent results may be thus obtained. We are glad to find that Mr. Watson favours the after treatment by means of astringent applications, &c.

Mr. Watson seems to consider Dr. Negrier’s treatment of epistaxis, by the raising perpendicularly upwards and retaining in that position the arm of the side affected, as something novel; we, however, have a very distinct recollection of the adoption of this method in our own juvenile person by an old nurse—with apparently successful results. Still we may, perhaps, at least allow Dr. Negrier the credit of an independent discovery in therapeutics.

In the treatment of tertiary syphilitic ulcers, while, of course, the chief reliance must be placed on the internal use of K.I., still we would not, as Mr. Watson implies, restrict the local use of mercurial applications to the cases in which the primary or secondary stages appeared not to have had the full benefits of a course of mercury, as we believe that there are very few cases in

which the local lesions will not be benefited by a wash or spray of perchloride, which has many advantages in ordinary cases over the calomel fumigation recommended by the author—although we are, at the same time, quite ready to admit that some intractable cases of ulceration seem to yield to the fumigation method when all others have failed.

We cannot altogether agree with Mr. Watson when he says (p. 118) that if, after a trial of full doses of K.I., “there is no amendment in the symptoms, it will be better to give up specific treatment altogether, and to rely upon topical applications and the internal administration of cod-liver oil and iodide of iron,” as we have seen more than one case in which there could be no doubt that the symptoms were those of the tertiary stage, and where the iodide of potassium had been given every chance without benefit, while immediate improvement followed the exhibition of carefully regulated doses of the green iodide of mercury combined with opium. We would not only agree with Mr. Watson as to the use of cod-liver oil, with or without the iodide of iron, in certain cases, but would go further and recommend its use as a “finishing touch” in the treatment of all cases of syphilis.

As might be expected from the very important advances made during the past fifteen years in reference to the far-reaching effects of vegetation in the naso-pharynx, and the methods of their treatment, the section dealing with this subject is quite new, only little more than a page having been devoted to this subject in the first edition. The section is practical and sufficiently full. The author quite recognises the fact that struma is a frequent factor in these cases, although, strange to say, this has been denied by writers of experience.

In dealing with disease of the frontal sinus, we find no mention of simple catarrhal inflammation of their lining membrane. This is not an unknown condition, and can give rise to much suffering. Mr. Watson is very dogmatic as to the most frequent cause of suppuration in the antrum. He says, in italics, “by far the most frequent cause appears to be the extension of suppuration from the root of a carious tooth, or from the periosteum surrounding it.” With this opinion we are inclined to agree.

The section on anosmia and other derangements of the sense of smell is good, and chiefly new.

In dealing with reflex neurosis depending upon intra-nasal disease (Section XVI.), the author speaks with commendable

caution. He gives a list of authors who have "in turn called attention to facts bearing upon the subject, and have formulated theories in support of the views propounded." Having recapitulated the long catalogue of disorders "*supposed* [the italics are ours] by Hack to depend upon turgescence of the inferior turbinated body," he says—"Hack also feels justified in treating rheumatic inflammation of the joints by cauterising the inferior turbinated body." Here, again, we think we can discern another instance of our author's humour. We fear he is not an implicit believer in Hack's novel treatment of articular rheumatism.

We think that in the following words Mr. Watson expresses admirably the opinions which should be held in reference to the subject. He says (p. 292)—"Without committing myself to the views thus laid down, I think there can be no doubt that in certain persons predisposed by an arthritic or some similar diathesis, intra-nasal disease will often produce some of these forms of nervous disorder. Asthma is the form of neurosis most commonly thus produced. About many of the others I feel considerable doubt."

The volume is liberally illustrated by plates and woodcuts, in both instances fairly up to the average of such as produced in these countries. There is a fairly full index, which includes the names of authorities quoted or referred to.

The Neuroses of Development. Being the Morison Lectures for 1890. By T. S. CLOUSTON, M.D. Edinburgh: Oliver & Boyd. 1891. Pp. 138.

IN his preface the author thus defines the object of his work—"In the course of the growth and development of the brain there are liable to occur certain failures in the attainment of a working standard of nervous and nutritional health, and the resulting defects or diseases may properly be called 'Neuroses of Development.'" "The following lectures are a most imperfect and fragmentary attempt to treat of such defects and diseases looking at them chiefly from the developmental and relational points of view." The brain has attained about 90 per cent. of its final weight at the seventh year of life, while growth is complete at seventeen years. It is evident that even at the latter age functional perfection has not been attained. Hence

the functional development of the brain is very slow, and this makes it peculiarly prone to be influenced by hereditary evil tendencies.

The occasions which bring out the hereditary defects are taken as the basis of an attempt to classify developmental defects and diseases, most of which are neurotic in origin. They are placed under four heads:—

1. *Formation and Embryonic Stage*—including the deformities present at birth, as cleft palate, talipes, spina bifida, as well as others not so evident, such as fibroma molluscum, and some kinds of genetous idiocy.

2. *Period of most rapid Brain Growth, Special Sense Education, Motor Co-ordinations, and Speech* (from birth up to seven years).—Under this head we find, among many others, the following—rickets, hypermetropia, ichthyosis, and tubercular meningitis.

3. *Period of Co-ordination of Motion and Emotion* (from seven to thirteen).—Chorea, epilepsy, asthma, megrin, myopia, &c.

4. *Puberty and Adolescence* (from thirteen to twenty-five).—Chlorosis, interstitial keratitis, ingrowing toe-nail, subungual exostosis, naso-pharyngeal polypus, phthisis, acute rheumatism, barrenness, adolescent stupidity, adolescent ugliness, &c.

The examples we have given chiefly to show that Dr. Clouston pushes the idea of developmental influence rather further than most persons would be inclined to do.

He places great, probably too great, stress on the pathogenetic influence exerted by the development of the “absolutely new and tremendously intense feelings connected with reproduction” which appear at the time of puberty.

In the second lecture, on some of the morphological signs of a bad neurotic heredity that appear during development, we find a most interesting account of the observations made by the author on the deformities of the palate in neurotics. From a careful consideration, and guided by a new method of measurement, he classifies palates into three divisions:—1. The *typical*, or *normal*, corresponding to what was called by Joy the horse-shoe arch, having a low but regular and wide dome; 2. The *neurotic* has a more Gothic arch, with the alveoli tending to run more parallel for a greater distance than the typical, and with a much higher and narrower dome, the roof of which is formed by a larger part of a smaller circle; 3. The *deformed* is of various shapes, all abnormal, but the most common form is very high,

very narrow, and at the top either V shaped or saddle shaped. All these forms are illustrated by excellent drawings.

Of 604 persons of the general population examined, 40·5 per cent. had the typical palate, 40·5 the neurotic, and only 19 the deformed. Of 286 degenerate criminals only 22 per cent. had normal palates, 43 the neurotic, and 35 the deformed. Of 761 cases of acquired insanity there were 23 per cent. normal, 44 per cent. neurotic, and 33 deformed. Of 44 epileptics the numbers were 20, 43, and 37 per cent.; of 171 cases of adolescent insanity, 12, 33, and 55 per cent.; while of congenital idiots and imbeciles the numbers were 11, 28, and 61 per cent.

“In considering the palate and upper maxillary bone we must take into account the following considerations, viz.:—

“1. Its relation to the base of the skull in man. This relation is seen to be close and absolute, as compared with the lower animals. The perpendicular line, which marks the most anterior part of the brain, is seen to fall in man through the centre of the hard palate, while in the monkey it only just touches its posterior margin. In man it has thus a direct relationship to the brain base, and its shape would be dominated by the width of this, while in the monkey it is merely a part of the alimentary system, having little relationship to the base of the brain at all. No one can compare the two without seeing that its conformation in man will naturally follow any changes that take place during development in the skull base. 2. If the skull in its growth, its size and shape, its dome and base, is absolutely dominated by the brain which it defends and contains, then the brain growth will in this way secondarily determine the shape of the upper maxillary bone and the palate. 3. The brain unquestionably deriving its shape and size and qualities from ancestry, and a bad heredity determining a bad brain, we see how a bad nervous heredity would naturally determine an abnormal palate.”

It would be impossible for us to follow Dr. Clouston through his descriptions of all the diseases which he looks on as developmental, or to reproduce his arguments and reasoning in support of his views. In some cases he appears to be too inclined to see everything through the nervous system, as when he says of rickets, “It is clearly a trophic neurosis, probably due to want of sunlight sufficient to give stimulus to the central trophic nervous centres which innervate the bones.” And surely it is not fair to give the “terrible family tree” sprung from an asthmatic but otherwise healthy man as an example of what may be expected in the descendants of a person suffering from this distressing but common affection (p. 67).

Hysteria, from its late occurrence, is supposed to be more closely related with adolescent insanity than with any other of the developmental neuroses. Hysteria is looked on as "a cortical disease, probably taking its special form from functional disturbances in those mental cortical centres where the reproductive impressions are received from their organs, and where those impressions are brought into relationship with the innumerable emotions, desires, and volitional efforts that relate to reproduction or arise out of it."

What we have given is perhaps sufficient to show the wide scope and philosophic character of these lectures. It is impossible to fail to recognise their importance, although we may, in some cases, think the views of the author are somewhat extreme. The numerous well-recorded and suggestive cases by which the lectures are illustrated add greatly to the value of a most excellent work.

RECENT WORKS ON ANATOMY.

1. *A Treatise on Practical Anatomy.* For Students of Anatomy and Surgery. By HENRY C. BOENNING, M.D.; Lecturer on Anatomy and Surgery, Philadelphia School of Anatomy, &c. Philadelphia and London: F. A. Davis. 1891. Pp. 481.
2. *Quain's Elements of Anatomy.* Edited by E. A. SCHÄFER, F.R.S., and GEORGE D. THANE. In Three Volumes. Vol. I., Part II. By PROFESSOR SCHÄFER. Tenth Edition. London: Longmans, Green, & Co. Pp. 261.

1. THERE are some books which set us athinking; the "Treatise" under notice is one of these. Works on anatomy are not popularly considered to be conducive to meditation. The above must be an exception. Ever since we read it we have been meditating over a question which a run through the book immediately suggests—What can have induced the author to undertake to write on anatomy? Up to the present we have been unable to arrive at any solution of the puzzle. Under the name of an anatomical treatise we have never read anything like it. If we had been shown the book in manuscript, and asked what we thought it was, our reply would have been "A student's anatomical note-book—*uncorrected.*"

The author is very modest when speaking of his work in the preface. He says—"It will be found fully abreast of the latest teachings in anatomy, and in some directions decidedly aggressive." Decidedly aggressive we must admit it is. Again we read, "the book is not a compilation." This, too, is evident, and to be regretted. And he adds, "the descriptions have been taken from the subject on the table." If so, we cannot get such subjects in this country. In ours we do not usually find the capsule of the hip-joint attached to the posterior intertrochanteric line, the radial artery crossing over the back of the base of the metacarpal bone of the thumb, nor the posterior interosseous artery running along the interosseous membrane. Our subjects rarely treat us to a radial nerve which "*accompanies the radial artery and is distributed to the muscles of the forearm and thumb and to the integument of the dorsal surface of the thumb, index, and middle fingers.*" Nor can we consider that such descriptions as the following are "fully abreast of the latest teachings in anatomy":—"Middle cerebral artery lies in the fissure of Sylvius, and sends branches to the meninges." No more information is vouchsafed on the subject, which is one of no small importance. "*Hunter's canal* is an oblique canal through the adductor magnus." The "temporo-sphenoidal convolutions are horizontally disposed," &c. "The corpus striatum rests on the anterior portion of the crus cerebri of each side." But the most unique thing in the book is probably the charmingly simple explanation of the brachial plexus. It is really refreshing in its novelty and simplicity. To do it justice we must quote the passage in full. We are told:—"The arrangement of the plexus can best be understood by the following formula: 3 nerves + 2 nerves = 2 trunks + 3 cords, or briefly, 3 N + 2 N = 2 T + 3 C." (It is to be remembered that this is neither a chemical equation nor a problem in algebra.) "In explanation" (the description goes on) "let it be remembered that five spinal nerves enter into the brachial plexus; that the fifth, sixth, and seventh unite to form the upper trunk; and that the eighth cervical and first dorsal unite to form the lower trunk: here we get 3 N + 2 N, which equals the sum of 5. Draw a line through the plexus, internal to the two trunks formed by the five nerves, thus:—" (Here comes a meagre diagram, which seems to give very little assistance in elucidating matters; still the text runs on happily) "and the rest of the formula becomes clear, forming 2 trunks plus 3 cords, or in full (3 N + 2 N = 2 T + 3 C), and from the cords the principal

branches of the brachial plexus are given off. The figure 5 is the key to the plexus.’

And this is called Anatomy!

2. We have already noticed two parts of this work; we have now a third before us. The two former parts were devoted to Development and Osteology respectively, the present one is on General Anatomy or Histology. We understand that there are still to come three other parts, which will complete the work: that on Ligaments, Muscles, and Vessels is nearly ready. In writing of the divisions which we have already reviewed we almost exhausted our store of praise. We need only say of the present part that it is a fitting companion for its predecessors. It is a thorough, clear, and scientific exposition of the subject of general histology, fully in touch with the best and latest teaching of the day.

It should be pointed out that the part embraces only the histology of the tissues and systems—viz., of the epithelia, the connective tissues, including blood, cartilage, and bone; of muscle, nervous tissue, the blood and lymph vessels, lymphatic and secreting glands, mucous membranes, and the skin and its appendages. There is also an excellent introductory chapter on the cell, protoplasm, and cell division, which is entirely new. It gives a thorough *résumé* of the recent advances in the anatomy, physiology, and chemistry of the cell—subjects to which much attention has been paid of late in several great schools of biology. The histology of special organs is still to come in later parts.

It would be useless to attempt to mention all the additions which have been made to this division of the work in the present edition. The whole part has been almost completely re-written, so that many of the old descriptions have either disappeared or been much altered in accordance with more modern teachings. As in former editions the work bears traces of the greatest care, and the most patient labour. The descriptions are in the clearest and most direct scientific language; they are as brief as the nature of the subject and the character of the work would permit. Every line seems to have been thoroughly weighed and considered before being put into its place. The result is the production of a whole so solid and compact that it strikes the reader at once as being sound in every fibre. There is an earnestness and an impressiveness about the style which carries with it conviction and satisfaction. One

leaves down the book with a feeling that the information he has got is thoroughly reliable, and that he has read the best that can be said on the subject.

The illustrations, which form a notable feature of this tenth edition, are very beautiful. Many of them are old friends of former issues, but a large number are quite new—particularly is this the case in the chapter on the cell. The figures illustrating the histology and development of bone call for special commendation, as do those in the chapter on nervous tissue.

In conclusion, we are thoroughly pleased with the book before us. We feel that "Quain" is almost a national institution in which we are all deeply interested. As the great Anatomy of our language we look upon it with pride, and we watch its progress with jealous eye. We feel fully satisfied that in the hands of its present editors its characters and its fame are safe, and we can only add our warm congratulations upon the success with which they have so far accomplished the difficult task which has fallen to their hands.

The Johns Hopkins Hospital Reports. Vol. II. No. 6. Report in Neurology I. Baltimore: The Johns Hopkins Press. August, 1891. Pp. 78.

THIS part of these valuable hospital reports contains four papers, all of considerable interest.

The first is a Case of Chorea Insaniens, with a Contribution to the Germ Theory of Chorea, by Dr. Henry J. Berkley. It details the particulars of a fatal case of chorea, with delirium, occurring in a young woman, aged twenty-seven, with the *post-mortem* examination. No bacteria were actually found in the nerve centres, but the changes found in the brain, meninges, and kidneys were very similar to those found in other unquestionably bacterial diseases, as diphtheria. They are—general hyperæmia of the internal organs; patchy endo-arteritis, with foul increase of round cells in the neighbourhood of the vessels; general increase in the number of leucocytes in the vessels; swelling of the endothelium; slight œdema of meninges and brain; granular and fatty degeneration of the renal epithelium; fatty degeneration of the heart muscle; hyaline globules in the lumen of many vessels; hyaline masses round the same; granular detritus; leucocytes in meninges enclosing fatty particles; round-celled foci in kidneys. The appearances were

similar in a dog suffering from chorea when killed. It is concluded that chorea is a general systemic affection, acting with greatest intensity on the vascular system and lepto-meninges, and that its cause is to be sought for in an especial bacillus or its toxical product.

In the second paper Dr. Charles E. Simon records three cases of acute angio-neurotic oedema. The affection first described as a distinct disease by Quinke, in 1882, under the term *Acut. umschriebenes Hautödem*. All these cases occurred in young women. The paper is an important contribution to the literature of this ill-understood affection. A good bibliography of the subject is appended to the paper.

The third paper is on *Hæmatomyelia*, by Dr. Aug-Hoch. Two cases are recorded in which, suddenly, some time after an injury to the back, paralytic symptoms supervened. Neither case died, so that the diagnosis is conjectural. The cases are distinguished by the great care with which they have been examined and recorded. The differential diagnosis is made from *hæmatorrhachis*, acute myelitis, and acute ischæmic myelomalacia. The subject is argued with great acuteness and ingenuity, and there can be little doubt on the reader's mind that the diagnosis of *hæmatomyelia* is justified. In one of the cases the form of the paralysis is that described by Brown Séquard as following unilateral injury of the cord, motor paralysis on one side, loss of sense of temperature, and pain on other side.

In the fourth paper, Dr. Henry M. Thomas records a fatal case of cerebro-spinal syphilis, with an unusual lesion in the spinal cord. The following are the clinical and anatomical summaries:—

Clinical Summary.—Male, aged thirty-three; no syphilitic history; paralysis of right sixth cranial nerve, accompanied by intense headache in January, relieved by treatment. In May, headache and paralysis of left fourth nerve. In November, paralysis of left third and fourth nerves; weakness of the muscles on the right side of the body, with slight sensory changes; increasing coma; death.

Anatomical Summary.—Syphilitic orchitis; syphilitic endoarteritis (gummatous) of cerebral arteries; gumma on left third nerve, involving left anus; gummata on left fourth, right sixth, ninth and twelfth nerves, and in brain; gumma on anterior roots of third cervical nerves; meningitis of cord; polio-myelitis of lumbar enlargement; hyaline degeneration in the walls of the small arteries.

The anatomical changes found are illustrated by a large number of highly demonstrative drawings. The case is of very great

interest, particularly as illustrating the changes produced by syphilis in the cord, a subject as yet very imperfectly investigated. Besides the hyaline degeneration of the vessels and capillary hæmorrhages, a condition of the lateral tracts was found which is considered to be an early stage of secondary degeneration. In the grey matter of the lumbar enlargement there was found extensive destruction—an anterior polio-myelitis, accompanied by capillary hæmorrhages, which had gone so far in some places as to cause the breaking down of the tissues and the formation of cavities of quite considerable size, which had probably been preceded by comparatively large hæmorrhages. It is thought most probable that the changes in the grey matter were not primary, but secondary and dependent upon the lesion of the blood vessels.

Epidemic Influenza; Notes on its Origin and Method of Spread.

By RICHARD SISLEY, M.D. London: Longmans, Green, & Co. 1891. Pp. 150.

THIS able and vigorously-written monograph has for its object to prove that influenza does not arise suddenly from any general aerial contamination, but that it begins always by isolated cases and spreads from these by infection until it reaches the dimensions of an epidemic.

The cases reported in which a whole town or continent was simultaneously affected are found, when submitted to strict examination to be wanting in proof, and the same may be said of the reported outbreaks on board ships at sea, and which have had no communication with the shore.

Influenza seems to be endemic in China, and very prevalent in Central Asia. The epidemic of 1889-91 appears to have had its starting point in Bokhara, where the height of the epidemic was reached in July, 1889. St. Petersburg was affected in October, and the height of the epidemic was attained in November. In Berlin and Vienna the disease was a month later. In both cities the greatest mortality was in the same week in December—a month later than in St. Petersburg, and a week earlier than in Paris. From the latter city the disease was imported to Montpellier, also to Frontignan; and many other examples of spread by intercourse with infected places are recorded from France. In all instances isolated cases preceded the outbreak of the epidemic, and the height of the disease was only gradually

reached, as in other infectious diseases. A very remarkable case is recorded from Brest. There were three ships lying close to one another. One of the officers of the "Bretagne" contracted the disease on shore, apparently by infection through parcels received from Paris. After having infected his wife and three servants on shore, he returned to his ship. There the disease broke out, and spread rapidly among the crew, 25 to 40 new cases occurring daily. Some of the sick persons were allowed to go to their homes. In every case the disease spread to the members of their families. All this time the two other ships lying close were free from the disease. The case is almost conclusive as showing that the disease is not spread by the air, but by contagion from the sick. In London, naturally, great difficulty is experienced in tracing the origin of an epidemic. But there numerous local outbreaks are recorded in all of which the disease began by isolated cases, and gradually extended from these until an epidemic was reached. One of the best observed of these is the outbreak in Broadwood's piano manufactory, as recorded by Dr. Delépine in the *Practitioner*. Both in London and the other large English and Scotch towns, and still more in the country districts, everything pointed to contagion as the cause of spread, and not any general microbe affecting the whole community simultaneously. This was shown by the invariable occurrence of isolated cases before the epidemic, the introduction of the disease in many instances by persons who came from an infected locality, and by the fact that the spread of the disease was along the most frequented lines of human intercommunication. It is manifestly impossible in a country like England to trace the route of infection in every case. "When these facts are borne in mind, it will readily be acknowledged that the unexplained appearance of the disease in an isolated place only points to our incomplete knowledge as to its introduction there, and need never excite wonder." London was affected in October, 1889; Manchester, in November; Colchester, Canterbury, Chelmsford, Oxford, and Liverpool, early in January; Birmingham, in second week of January. Places more remote, as Feversham, Stourbridge, and Wimborne were reached in February, the rural parts of Derbyshire in the third week, of February, and in March the disease was spread in the more thinly peopled portions of Wales.

As further showing the influence of contagion in the fact that persons leading an isolated life escaped. So, many persons escaped

altogether although the epidemic was raging in the towns in which they were situated ; and in those cases where the disease did occur in prisons, the prisoners suffered much less than the attendants whose intercourse with the town was freer. The same is true of the inhabitants of poorhouses and convents.

The question as to whether infection can be spread by fomites is left undecided. There are many cases recorded which appear to show that this is possible, but none of them are absolutely conclusive.

Great difficulties are experienced in fixing the incubation period of influenza ; but many well-observed cases are reported which would seem to prove that this may be very short—under twenty-four hours.

The general opinion of veterinary surgeons is that, although epidemic diseases resembling influenza occur in horses, dogs, and cats, yet that their causation is different to that of human influenza, and that the disease is not communicable from men to animals or from animals to men. There are, however, others who hold the contrary opinion, and believe that the diseases are identical in men and animals, and transmissible from one to the other.

Finally, the author advocates strongly that influenza should, by Act of Parliament, be placed among the infectious diseases for which notification is compulsory.

Clinical Manual for the Study of Medical Cases. Edited by JAMES FINLAYSON, M.D., Physician and Lecturer on Clinical Medicine in the Glasgow Western Infirmary ; Physician to the Royal Hospital for Sick Children, Glasgow, &c. Third Edition. London: Smith, Elder, & Co. 1891. Pp. 719.

WE welcome with much pleasure the Third Edition of Dr. Finlayson's Manual. It is, so to speak, the converse of ordinary text-books of medicine, treating, as it does, of the same subjects, but approaching them from the opposite point of view. In books on Practice of Medicine the contents are classified and divided according to the various diseases described. In the Clinical Manual, the different systems and organs of the body are taken as the groundwork, and their condition and functions in health and disease are discussed and explained at length. In a text-book of medicine the student finds an account, say, of bronchitis, with all its signs and symptoms. In the Clinical Manual he reads about the characters

of breathing, normal and abnormal, the varieties of cough, the characters of sputum, and the modes of making a microscopic examination of it, of the methods of making a physical examination of the thoracic organs, pulse, urine, &c., &c.

Many matters, too, which are not very fully described in books on medicine, are here fully discussed; there are a number of useful tables showing the average weight and height of children of different ages; there is a chapter on Electrical Instruments in Diagnosis, in which will be found an account of the various kinds of electrical batteries and their appropriate uses; an account is given of the Physiognomy of Disease; and many hints are given which the student will find useful in examining cases.

We consider that the Manual fulfils admirably the author's design—viz., “to aid students in the actual study of their cases, by supplying details of the methods followed in clinical work, along with indications of the significance to be attached to various symptoms.” No student, and, we may add, no practitioner who desires to set about his work in a thorough and scientific manner will regret having purchased this volume.

MEDICAL DIARIES AND VISITING LISTS FOR 1892.

1. *The A.B.C. Medical Diary and Visiting List.* 1892. London: Charles Letts & Co., and Burroughs, Wellcome, & Co.
2. *Letts's Medical Diary for the Year 1892.* London: Cassell & Company.

1. MESSRS. BURROUGHS, WELLCOME, & Co., have just published their A.B.C. Medical Diary and Visiting List for 1892, which is very similar to the diary issued by that firm for many years past. Columns have been added to the weekly diary, in which the fees due by each patient can be inserted. It is claimed for this addition that it is “important,” as enabling the medical practitioner to state at once the amount due and receive payment. To us this addition seems to be of doubtful taste, but perhaps it will work better than we think.

Another improvement in the diary is the pattern of tuck now adopted. The whole of the flap is inserted in the pocket, and so cannot become torn. The edges of the book also cannot be crumpled.

This diary contains considerably less printed matter than the

edition of 1891, and so is less bulky and more portable. Forty pages of very tough but thin paper at the beginning of this very neat pocket-book contain an immensity of valuable and wonderfully condensed information, including an index of remedies and a posological table.

2. Letts's Medical Diary is longer but narrower than the A.B.C. Diary. It is equally condensed, but contains a great deal of useful information, notwithstanding. We think the insertion of advertisements in the middle of the pages containing information is a mistake. It makes reference to the contents a matter of some difficulty. On the whole, however, we have to express our hearty approval of this neat and handy diary.

The Ophthalmoscope. A Manual for Students. By GUSTAVUS HARTRIDGE, F.R.C.S., &c. With 63 illustrations. London: J. & A. Churchill. 1891. Pp. 123.

AFTER a careful perusal of this volume we have come to the conclusion that it possesses no special advantages over similar works intended for the same purpose—namely, as a pocket-book of reference for use in the out-patient room. Indeed, we have already questioned the necessity for the existence of such works, in view of the numerous small and portable hand-books on ophthalmology as a whole.

Chapters I., II., and III. are devoted to preliminary optics, the theory and use of the ophthalmoscope, retinoscopy, &c., while the remaining chapters deal with the normal and pathological appearances of the fundus of the eye, including one on the examination of the anterior parts of the eyeball by focal illumination. The latter portion is simply and clearly written; the best chapters, perhaps, being those on the optic nerve and retina. The first part is not so satisfactory, many of the explanations, although obvious to anyone possessing a slight knowledge of optics, are not sufficiently precise and explicit for students. We may take a few instances. One occurs on the very first page. It is stated that "Rays of light diverge—the nearer the source of the rays the more they diverge;" this is evidently not true in an absolute sense, the angle of divergence between any two rays is always the same. What is implied is, that if rays impinge on a given surface, the angle formed by the extreme outer rays is greater the nearer the surface is to the source of light.

On page 7 we read that “the *amount* of refraction is the same for any medium, at the same obliquity, and is called the index of refraction; air is taken as the standard and is called 1.” This statement gives a very hazy notion of the real meaning of a refractive index. We could point out several other examples, but the above will suffice. There are also a few instances of omissions—*e.g.*, on page 15 spherical aberration is mentioned without any explanation of its meaning. On page 21 the reason why rays entering the eye return to the source of origin is not given, nor is the reader referred back to it. The movement of the vessels, as seen with the ophthalmoscope, in myopia and hypermetropia is not fully explained.

An appendix which occupies the three last pages gives a *resumé* of the proper routine to be adopted when examining an eye. The book is remarkably free from misprints, but “Galezowski” appears twice as “Galizowski.”

Differences in the Nervous Organisation of Man and Woman, Physiological and Pathological. By HARRY CAMPBELL, M.D., B.S.
London: H. K. Lewis. 1891. Pp. 383.

THIS most interesting and fascinating work is divided into three parts. The first treats of the evolution of sex. The following is the account of how the sexes came to be separated:—“Suppose that in the evolutionary career of a given species a stage has been reached at which, while the organism still remains hermaphroditic, the female generative system is fairly complex; then given an individual varying in such wise that the female generative system is better developed, and the male generative system not so well developed as in an average member of the class, such an individual will stand a better chance of leaving a numerous progeny than the average member. And, similarly, an organism possessing the male generative system more developed than the female will be at an advantage over others as regards its capacity for fertilising. According to the laws of heredity, as limited by sex, their respective characters will tend to be transmitted respectively to certain individuals among the offspring, some developing more of the female, others more of the male sexual character. It is further evident that those of the offspring in which the sexual disparity is greatest will stand the best chance of leaving a numerous progeny to inherit their sexual

peculiarities; and thus it happens that with each generation the female element will become more pronounced in one set of individuals, the male in another, until an element in each organism being finally eliminated altogether the sexes become quite distinct."

As regards the all-important question of the inheritability of somatogenetic characters no decided opinion is given; but the author inclines to agree with Weismann, and to deny such inheritance. That blastogenetic characters are inherited there can be no doubt; but how far these are influenced by the environment is not quite clear. Weismann believes that effects produced by the environment are inheritable, but that the change thus wrought takes no part in evolution. Dr. Campbell, however, maintains that distinct pathological conditions may be thus induced, and that the tendency to disease may thereby accumulate from generation to generation.

The views of Gidder and Thompson that the male organism is more katabolic and the female organism is more anabolic, that the former is characterised by the expenditure of energy, the latter by the storage of energy, are fully considered, and the contrast is regarded as most important and having considerable pathological significance, although it cannot be taken as expressing the primary and fundamental sexual difference.

In the second part, which is "chiefly concerned with the pathological application of conclusions arrived at in Part I.," we would notice as more than usually interesting the chapters on woman and undeveloped man, and those on the monthly rhythm. In the latter it is argued that a monthly period or cycle is common to both men and women, and that the actual occurrence of the menstrual flux is only one stage of the cycle, just as new or full moon is of the cycle in which the moon completes her orbit around the earth.

The third part is psycho-physiological. In this the chapters on the varieties of male will are of great interest. These varieties are divided into four groups:—

1. The form in which compound mento-motor action tends to approximate to simple mento-motor action.
2. That in which no one impulse to action is able to retain the permanent mastery—*i.e.*, vacillation.
3. That due to the peculiar strength of sense over motion of the nature of a fascination.

4. That in which coherent thought is impossible, the individual being incapable of realising in idea any definite course of action.

The entire work is, of course, mainly speculative, but it is full of ingenious and suggestive matter, and is evidently the outcome of much thought and observation. It is written in a charmingly easy and unaffected style, free from obscurity or pedantry. It is a volume which, if once taken up, will scarcely be laid down until it is finished.

An Introduction to Human Physiology. By AUGUSTUS W. WALLER, M.D. London: Longmans, Green & Co. 1891. Pp. 612.

In this work we have the latest handbook of Physiology for the use of medical students. It is one to which we can afford the highest praise, and we would say that, in our opinion, it is, for the class for which it is written, the best book on Physiology in the language.

The division of the subject is into two parts. Firstly, the phenomena of Nutrition—including blood and circulation; respiration; digestion; renal excretion and food, nutrition, and excretion; and animal heat.

Secondly, the phenomena of Excitation—including the peripheral nervous system; muscle; animal electricity (treated in a chapter by itself); light and vision; sound and hearing, and the other senses; and the central nervous system.

In an appendix is a short sketch of Embryology, and an outline of physiological chemistry, together with tables of weights and measures.

There is a pretty full bibliography given at the end of the volume, and the copious reference to recent papers will be found most useful by senior students or others wishing to extend their knowledge beyond the limits of a text-book. Finally, there is a good index.

At the head of each chapter is placed a very full table of its contents. This is intended to serve not only as a summary or syllabus, but as a means by which the student can examine himself.

The chapters dealing with difficult subjects, and which may be omitted by the junior student, are marked, so that the selection of parts to be studied in a first reading is easily made.

Throughout, the work is written in a clear, pointed style, free from affectation or obscurity. The facts are accurately stated, and

the information is all up to date. The text is abundantly illustrated, not by the histological drawings, which occupy such an undue amount of space in most students' text-books, but by drawings of instruments, curves, and such diagrams and figures as are distinctly physiological rather than anatomical. The type is large and clear, and the paper and binding all that can be desired.

On the whole, this is a work we would strongly recommend to all our readers, who require within a reasonable compass a thoroughly reliable and complete view of modern Physiology. We congratulate Dr. Waller on the production of the volume, which will, we doubt not, add to the deservedly high position which he already holds among contemporary physiologists.

The Human Figure : its Beauties and Defects. By ERNST BRÜCKE, Emeritus Professor of Physiology in the University of Vienna, &c. With a Preface by WILLIAM ANDERSON, Professor of Anatomy to the Royal Academy of Arts, London. With 29 Illustrations by Hermann Paar. London: H. Grevel & Co. 1891. 8vo. Pp. 188.

PROFESSOR BRÜCKE has clothed with anatomical learning Hamlet's famous reflection on man :—"What a piece of work is a man! how noble in reason! how infinite in faculty! in form and moving how express and admirable! in action how like an angel! in apprehension how like a god! the beauty of the world! the paragon of animals!" He has added to the poet's enthusiasm of mere beauty the sculptor's knowledge of bone and muscle which brings into prominence every line and curve of physical grace and strength. He has provided for us an anatomical key to the forms and proportions of paintings and statuary which have come to be recognised as embodying the highest point of physical development. The author does not single out as the artistic type that which in many instances anatomy would teach us to be the normal one, but allows to the artist ample scope to avail himself of any slight deviations which may present a more pleasing outline or add to the symmetry and grace of his delineation. We cannot single out the numerous points of interest touched upon by Professor Brücke. Suffice to say it will be found to afford much instruction to those who are not merely students of art, but to all those who care to see the ghastly details revealed by dissection clothed, yet not concealed, by the skill of the painter's brush or of the sculptor's chisel;

to realise Coleridge's ideal of "the sublime of man"—"to know himself, part and proportion of a wondrous whole." A word of praise must be added for the beautiful specimens of wood engraving by Hermann Paar, mostly from well-known sculptures or paintings, which adorn the volume.

Nerve Prostration and other Functional Disorders of Daily Life.

By ROBSON ROOSE, M.D., &c. Second Edition. London : H. K. Lewis. 1891. Pp. 671.

FUNCTIONAL disorders, so-called, or as we should say diseases whose real nature is unknown or misunderstood, are the happy hunting ground of therapists and speculators. The pursuit only, while it does not contain much that is new or original, gives a plain straightforward account of the symptoms of each of the conditions described without too much theoretical speculation about anabolism and katabolism, and does not unduly multiply the therapeutic agencies to be employed in treatment.

The book will, no doubt, be found useful by many practitioners, although to the scientific physician the effect it produces is not satisfactory.

It is divided into an introduction and four sections. In the introduction it is fairly stated that no sharp line can be drawn between functional and organic diseases, and that many diseases formerly regarded as functional are now known to have an organic basis.

The first section treats of the functional disorder of the nervous system, including neurasthenia, hysteria, epilepsy, neuralgia, headache, hypochondriasis, toxic neuroses, and others.

The second section is on the functional disorders of the organs of circulation, and deals with palpitation, syncope, neurasthenia of the heart, characterised by weakness of the heart with increased excitability, and angina pectoris.

In the third section the functional disorders of the respiratory organs are considered. These include laryngismus stridulus, asthma, and hay fever. It seems rather a straining of terms to call the last a functional disorder.

The fourth section deals with the functional disorders of the organs of digestion. This is, to our mind, the most unsatisfactory section. We find chapters on dyspepsia, nervous dyspepsia, con-

stipation, diarrhœa, and other conditions which are merely symptoms of different and altogether distinct conditions.

There is no doubt that many useful hints may be got from the perusal of this book, although, as we have said, we do not look on it as an example of the highest class of medical literature. The style is clear and easy to read, and the manner in which the work is brought out leaves nothing to desire.

Refraction of the Eye, its Diagnosis and the Correction of its Errors.

By A. STANFORD MORTON, M.B., F.R.C.S. Eng. Fourth Edition. H. K. Lewis. 1891.

WE gladly welcome a new edition of this little work on Refraction. As we have had occasion to notice each of the former editions, we need not do more than state that we have no reason now to reduce the large share of praise which we bestowed upon the earlier editions. The book though small, only 69 pages, puts clearly all the most important facts concerning the subject with which it deals. In the present edition the whole book has been revised, and in part rewritten, but no very essential change in its arrangement and scope has been made.

We still regard it as one of the very best of the small works on Refraction.

QUASSIN.

SS. OLIVERI and DENARO having obtained quassin in a pure and crystalline state, thus describe it:—Quassin occurs in fine needle-like colourless crystals of the monoclinic order when formed from a warm menstruum. On cooling, the crystals tend to form an amorphous mass, which is very soluble in alcohol, acetic acid, and chloroform, but sparingly so in ether. Exposed to the air, the solution becomes yellowish. The glucoside is neutral in reaction; does not reduce Fehling's solution; gives a white precipitate with tannic acid, and gives no colour test with perchloride of iron. It dissolves in concentrated alkaline solutions, but not in solutions of the carbonates. The chemical is given as $C_{10}H_{22}O_5$, or $C_{32}H_{44}O_{10}$.—*Gazzetta Chimica Italiana*, No. 165, May, 1891. [The chemical formula given above differs from that ascribed to the glucoside by British writers, who give the formula as $C_{10}H_{12}O_3$. Attfield, however, accepts the formula of SS. Oliveri and Denaro].

PART III.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—GEORGE H. KIDD, M.D., F.R.C.S.I.

General Secretary—W. THOMSON, F.R.C.S.I.

SECTION OF OBSTETRICS.

President—ANDREW J. HORNE, F.R.C.P.I.

Sectional Secretary—W. F. KIDD, M.D.

Friday, November 27, 1891.

Dr. ATTHILL in the Chair.

President's Address.

THE PRESIDENT having returned his warmest and best thanks to the Fellows of the Royal Academy of Medicine for having elected him as President of the Section of Obstetrics, read an Address on Cæsarean Section. His firm conviction was that there are many infants annually sacrificed who might be saved if the medical profession would recognise the fact that a majority of such cases could be saved by prompt surgical interference. He gave a short *resumé* of the history of the operation, and did not consider it required more than ordinary surgical skill for its performance. He laid special stress on the treatment of the uterine wound, as advocated by Säger, of Leipzig, and paid a tribute of respect to Lister, as having restored the Cæsarean section from the limbo to which it was consigned to its proper place in the surgical art, by means of antiseptics. On the early recognition of pelvic deformity depended the success of Cæsarean section.

Specimens Exhibited.

DR. W. J. SMYLY showed specimens of myoma uteri removed from six different patients, which illustrated the chief varieties of such growths.

CASE I. was a subperitoneal fibroid with a long pedicle, somewhat larger than a foetal head. It had been removed from a patient in the

sixth month of pregnancy. The pedicle was transfixed and secured with a Staffordshire knot, and the peritoneum stitched over the raw surface. Patient recovered.

Case II. was also a subperitoneal myoma, but senile. The primary object of the abdominal section was the removal of a large multilocular ovarian tumour, but the myoma, which was as large as a closed fist, was wedged down in Douglas' pouch, and was causing pressure-symptoms, and was therefore removed at the same time. An elastic ligature was placed below the tumour, which was removed by a wedge-shaped incision, and the edges brought together by suture. The patient died from pulmonary embolism on the third day.

In the next three cases the uterus was removed by supra-vaginal amputation, the stump being treated extra-peritoneally.

CASE III. first came under observation three years ago with a sloughing fibrous polypus in the vagina, but she absolutely refused to have it removed. Six months later, however, this was accomplished by another operator, but she nearly lost her life from pyæmia. She recovered, however, but was subsequently attacked with diphtheria, followed by paralysis of the soft palate. The abdomen had then enlarged to the size of a full-time pregnancy. In July of the present year (1891) she came into the Rotunda Hospital in a deplorable condition; the uterus reached to a handsbreadth above the umbilicus. and a sloughing polypus occupied the vagina and protruded from the vulva, causing painful expulsive efforts and a most offensive discharge. She was greatly reduced by hæmorrhage, septic fever, and morphia. Her temperature was 104° F. The day following her admission the polypus, which weighed 1½ lbs., was removed, but as her temperature continued high the uterus was also removed two days after. The operation was rendered very difficult by firm peritoneal adhesions, and the ovaries, which were as large as hen's eggs, were crossed behind the uterus embedded in inflammatory exudation, and filled with pus. The ovaries having been removed, the uterus was drawn out and the abdominal wound closed and thoroughly protected before it was amputated. The stump was well cauterised with the actual cautery and dressed with tannic and salicylic acids. The patient made an afebrile recovery.

Cases IV. and V. were intra-mural myomata. The first multinodular, the second of the soft uninodular variety; both made good recoveries.

Case VI. was a myoma the size of an ostrich-egg, which had developed at the back of the uterus in the cellular tissue beneath the peritoneum, and had caused so much distress as to necessitate its removal. When the tumour was exposed the peritoneum covering it was laid open by a crucial incision and the growth enucleated. The cavity was drained through the vagina, and the peritoneum closed over it by continuous catgut suture, so as to exclude it completely from the peritoneal cavity. This patient also made an uninterrupted recovery.

MR. M'ARDLE asked Dr. Smyly if catch forceps were used during the efforts at securing the pedicle of the ovarian tumour, as the contusion of the veins thus brought about might account for the pulmonary embolism which caused death. Mr. M'Ardle had frequently seen the femoral and axillary veins so contused by forceps that clotting occurred at the points of pressure, owing to injury of the inner wall. Possibly compression of the stump caused in this case pelvic phlebitis, otherwise it is difficult to account for the result.

DR. SMYLY replied that catch forceps had not been used, but that the pedicle had not been compressed with catch forceps, but by the elastic ligature.

DR. LANE exhibited a pin about two inches in length, which he had removed from the bladder of a young lady. Patient was seen on the day the pin escaped into bladder, and was with ease felt by examination per vaginam. The head was resting against posterior wall of bladder and to right of uterus, the point being directed forwards and to left side of orifice of urethra. Owing to certain reasons, the attempt to remove the pin had to be postponed for three days, and when patient was under ether the pin was found to be lying transversely and some distance above the inner orifice of urethra. Previous to any examination, vagina was washed out, and prior to attempting to remove pin the bladder was injected with water. The pin was caught and withdrawn. There was a very slight amount of blood in urine that day; none afterwards, but urine was turbid. On fifth day patient got a severe rigor and got pyelitis of both kidneys. Cause not quite certain, as temperature and pulse had been perfect, unless it was due to cold, as patient had the day previously been sitting up in bed at an open window, without much covering. Symptoms gradually subsided, and patient made a perfect recovery.

DR. MORE MADDEN was certain that the Academy would appreciate the intent of Dr. Lane's communication both as regards the comparative rarity of the accident described and the efficacy of the treatment adopted in the case just referred to. The bladder has in many instances been found the receptacle for a most extraordinary and heterogeneous assortment of misplaced articles, an occurrence of which several instances were long since related by the late Sir Benjamin Brodie, as well as by Sir Philip Crampton, and more recently by Dr. Barton, of this city. Dr. More Madden on a former occasion had exhibited a piece of slate-pencil which he removed from the bladder of a young female.

Two Cases of Cæsarean Section.

DR. W. J. SMYLY said—I have the honour of exhibiting to you two patients with their infants, upon whom I performed the operation of Cæsarean section in the Rotunda Hospital. They present one feature only in common—namely, such an extreme degree of pelvic deformity that

the birth of a living child by any other method than abdominal section would be impossible. In other respects they present marked contrasts. The one is a well-marked example of a rare deformity, the result of a kyphosis in the lower lumbar and upper sacral regions of the spine, in which the narrowing is most marked in the transverse diameters, and especially at the pelvic outlet. The other is an example of the generally contracted flat rachitic pelvis, in which the narrowing is most marked in the conjugate diameters, and especially at the pelvic brim.

CASE I.—Mrs. H., aged thirty, was sent to the Rotunda Hospital by Dr. Alfred Smith, of St. Vincent's Hospital, when in the fourth month of her second pregnancy. Her first child had been delivered with the perforator and cranioclast in the hospital in 1889. The patient was of small stature, 4 feet 5 inches in height, with a well-marked kyphosis in the lumbar region. She was so much bent forwards that the thorax was overlapped by the wings of the ilia. She had no recollection of the illness which produced this deformity, but her mother had informed her that she had been treated for spinal disease in St. Vincent's Hospital when an infant. The alæ of the ilia were flattened outwards, the distance between the anterior superior spinous processes being 26 cm., and the most distant parts of the crests 28 cm. The symphysis pubis protruded in a beak-like process resembling that of a cordiform pelvis, and there was marked narrowing of the pubic arch. There was considerable narrowing of the outlet, especially of its transverse diameter, the ischial tuberosities being approximated to within 5 cm. (2 inches) of each other; the promontory of the sacrum was out of reach. After consultation with my assistant, we informed the patient that a living child could only be obtained by abdominal section, and to this she readily assented.

Labour set in at full term on Sunday, the 7th of June, and I proceeded to operation about ten o'clock in the morning. She had then been some hours in labour, and the os was about two-thirds dilated; the head was well down in the pelvis, but the membranes were unruptured. The abdomen having been opened by a free incision, the uterus was drawn out, and an elastic ligature placed around the cervix. It was then opened, the membranes sutured, and the fœtus extracted. The placenta and membranes having been carefully removed, the interior of the uterus was well scrubbed with a strong solution of carbolic acid. Although I adopted this precaution in both my cases, I now think it had better be omitted, because the interior of the uterus is—except under exceptional circumstances—quite aseptic, and the process occupies time and depresses the tissues, so as to render them more liable to a later infection; and I find that, in Dr. Murdoch Cameron's cases, although it was omitted, the results were eminently satisfactory. The patient made an afebrile recovery, and nursed her infant.

CASE II.—Mrs. G., aged twenty-four; a primipara; had evidently

suffered from rickets in early infancy. The shape of her head and thorax, her large joints and bow-legs, as well as the pelvic deformity, testifying to the fact. The distance of the anterior superior spinous processes of the iliac crests was $22\frac{1}{2}$ cm., and the most distant points of the crests 23 cm. The true conjugate of the brim was only 6 cm. ($2\frac{1}{4}$ inches). When I was called to the patient she had been forty-eight hours in labour, and violent efforts had been made to deliver with forceps. Under these conditions I was at first disposed to resort to the perforator, as such misdirected efforts greatly diminish the prospects of success in abdominal section; but considering that strict antiseptic precautions had been maintained throughout, and that the foetal heart was beating strong and regularly, I came to the conclusion that the more conservative proceeding was still justifiable. I then performed Cæsarean section as in the former case. After extraction a deep scalp wound was found on the child's head, and another contused wound upon its neck, resulting from the pressure of the forceps, both of which suppurated, and have left permanent scars. The mother's convalescence was retarded by suppuration, a large quantity of pus escaping from the lower end of the wound when the sutures were removed on the eighth day. It healed, however, by granulation, and she left the hospital with only a small sinus remaining, which ultimately closed after the discharge of three sutures.

DR. MORE MADDEN.—No subject of greater practical importance could probably be brought before this Section of the Academy than that which has been introduced by the President's Address and in Dr. Smyly's paper. The advance of modern midwifery has been most strikingly exemplified in the changed position in obstetrics in favour of craniotomy and Cæsarean section. Five and twenty years ago the former was invariably resorted to in those cases of difficult or obstructed labour, in which a living child might now be delivered from a living mother with safety to both. Dr. Murdoch Cameron, of Glasgow, as well as Dr. Smyly and others, had abundantly demonstrated the possibility, and with due precautions the safety in proper cases, of the Cæsarean section. The necessity for choosing between craniotomy on the one hand, and Cæsarean section on the other, does not, however, so often actually arrive as some may suppose. In twenty years' midwifery experience Dr. More Madden had never met with any case justifying resort to craniotomy, and in only one instance had he found Cæsarean section necessary. It is a great satisfaction to one who like himself had long maintained that opinion, to find that most of the leading obstetricians of the present day now probably agreed that child-destroying operations should be eliminated from midwifery practice, and that the only question, in extreme cases of difficult labour, should be which one of the two suggested child-saving operations—viz., Cæsarean section or Porro's operation, should be resorted to.

Dystocia due to a Cyst in the Liver of a Fœtus.

DR. BAGOT read a paper on "A Case of Distocia due to a Cyst in the Liver of a Fœtus." He considered the case of extreme interest from a pathological as well as from an obstetrical point of view. Records of cases where congenital cysts of any size had been found in the liver were very rare, as were also records of such, or indeed any, tumour of the fœtal liver causing dystocia.

The history of the case from which this specimen had been taken was as follows:—As Senior Assistant Physician to the Rotunda Hospital he was summoned to the assistance of two of the students of the hospital who were in attendance on a woman in the extern maternity department. It was her second pregnancy. Her first had terminated normally and at full term. She had been in labour thirteen hours. The head of the child had been born immediately on the arrival of the students; but the body was delayed, and though they had tried both expression and traction they were unable to deliver it. Dr. Bagot accordingly went to their assistance, and found, as they had reported, the head somewhat smaller than normal, completely born, and the child apparently dead some little time. The woman stated that she was about $8\frac{1}{2}$ months pregnant. Her body was covered with a papular rash, apparently syphilitic. Dr. Bagot then administered chloroform, and proceeded to palpate her abdomen. He found the uterus much larger, and more tense than was usual at full term, though some of the liquor amnii must have escaped on the rupture of the membranes. On percussion a very distinct fluctuation thrill could be felt.

The back of the child could with difficulty be mapped out, looking forward, and towards the left in the first position. It at once occurred to Dr. Bagot that he had to deal with a case of Hydrops Amnii, complicated by some abnormality of the fœtal abdomen, such as ascites or an ovarium tumour, &c. Accordingly, after a thorough disinfection, he passed his hand up posteriorly along the anterior surface of the child, and on reaching the uterine cavity, which still contained an abnormally large quantity of liquor amnii, he found, in accordance with his expectations, that the abdomen of the fœtus was enormously distended. He perforated the child's abdomen close to the xiphoid cartilage by means of a Smellie's scissors, upon which a yellow fluid poured out, mixed with the liquor amnii, which then came freely away. The child, a male, was then easily delivered, the placenta following almost immediately. After stitching up the hole made by the perforation, Dr. Bagot injected the abdomen till it almost assumed its original tension, and found that its capacity was 60 oz.

He then made the following measurements:—Length of fœtus, 45 cm.; girth of umbilicus, 59·75 cm.; distance from sternum to pubes, 39·5 cm.

On opening the abdomen he found that the chief abnormality existed in the liver. The other organs, with the exception of the kidneys, which were very small, were apparently normal, as far as could be made out from a hurried examination of them *in situ*; for the father having returned, demanded the restitution of the body without any further examination. Dr. Bagot, however, succeeded in removing the abnormal viscera for examination, which showed the following:—

Liver.—*Right Lobe* comparatively normal; perhaps rather small for a full-term foetus. On its under-surface near the right edge was a small lobe marked with parallel ridges. The gall bladder was absent, and the lobus quadratus consequently not marked off. Hepatic artery and vena portæ normal. Hepatic duct present, rather small. It was not possible to trace a branch to the left lobe with any certainty, but it was probable that the left duct had been torn from its connections on account of the haste with which the autopsy had to be made. The duodenal end of the duct was not observed.

Left Lobe.—The whole left lobe was converted into a large simple cyst capable of holding 48 ounces of fluid. It was smooth on its surface and marked by ramifications of vessels and ducts. The inner surface was also smooth, except that it was covered by a whitish film which could easily be stripped off. The fluid from the cyst having all drained away at the time of perforation could not be examined. Histologically the hepatic tissue was normal. The wall of the cyst was formed of two layers of about equal thickness. One next the cavity of the cyst consisted of a rather dense fibrous connective tissue; and outside this, over the greater part of the cyst wall, a layer of equal thickness, consisting of hepatic tissue. Where this was absent, its place was taken by large vessels and ducts. Near the junction of the two layers numerous small ducts were to be seen. In no case at all did these approach the cavity of the cyst, but opened into the larger ducts mentioned above as accompanying the vessels.

No epithelium could be demonstrated on the interior of the cyst. The kidneys, though very small, were normal in structure. Dr. Bagot had been able to find records of two cases only, which in many points resembled his. The first, reported by Witzel (*Centralblatt für Gynäkologie*, No. 24, 1880) as a case of dystocia, due to a hemicephalous foetus, with large cystic liver, cystic kidneys, and other malformations. It was easily delivered after perforation of the abdomen. The second case, reported by Lomer (*Virchow's Archiv*, No. 99), Dr. Bagot thought worthy of notice, from the fact that it occurred in a syphilitic child. It did not, however, cause any delay in the labour. In it the following abnormalities were present:—Obliteration of cystic and right hepatic ducts, gall-bladder collapsed and obliterated, left lobe normal, right lobe rough, convoluted, and degenerated, with cyst in it. The foetus was macerated,

and its bones presented syphilitic lesions. Lomer considered it either primary developmental defect, or else due to syphilitic perihepatitis.

Dr. Bagot had been able to find only four cases, besides that recorded by Witzel, where dystocia had been caused by any form of liver tumour—viz., (1) Haase (N. Z. XI., 262); (2) Müller (Hohl, p. 286); (3) Naggereth (Deutsche Klinik, 1854, No. 44; Wochenschr. IV., 458); (4) Schlesinger (Hohl, p. 289). The first three, according to Winchel, “resolve themselves into either hepatic physconia, or a lymphatic tumour of the liver.” The tumour in Naggereth’s case was a carcinoma.

SECTION OF PATHOLOGY.

President—C. J. NIXON, M.D.

Sectional Secretary—J. B. STORY, F.R.C.S.I.

Friday, December 4, 1891.

The PRESIDENT in the Chair.

United Fractures in Animals.

DR. FRAZER showed:—No. 1.—Humerus of grouse, broken at lower part and united with much angular deformity and overlapping of lower fragment.

No. 2.—Wing of pheasant. Radius broken at lower third; much consolidation around seat of fracture, with spiny protuberances from callus.

No. 3.—Pintail duck. Fracture of both wing bones radius, and ulna, with overlapping

No. 4.—Fracture of leg of hare, with considerable oblique displacement of the lower fragments.

These injuries, probably all due to gunshot wounds (though possibly the broken leg of hare may have resulted from some other cause), appear worth exhibiting as illustrations of the remarkable powers of healing without surgical aid or the benefits of antiseptic treatment they evince in their former owners. In every instance the union of the injured bones has resulted in a useful limb, capable of flight or locomotion.

Specimen of Intussusception of the Dying.

DR. M’HUGH exhibited a case in which descending intussusception of the jejunum had occurred in two places. In neither of the suscepta was there any trace of inflammatory reaction or adhesion, and both were readily reducible. The specimen was found by the exhibitor in the Dissecting Room of the College of Surgeons in a male adult subject, which was, however, already in an advanced stage of dissection. The thoracic organs had been entirely removed, and the cause of death was

not ascertainable. The intestine itself presented no signs of disease, and there was no intussusception of the ileo-cæcal valve. The case was clearly one of what is very commonly called *post-mortem* intussusception, or, more properly, intussusception of the dying, as the invaginations might be supposed to have taken place whilst the patient was *in articulo mortis*. The condition is comparatively frequently copied in autopsies of children, but as far as the exhibitor was aware was infrequent in adults. The fact that both invaginations were high up in the jejunum and descending in direction was noticeable.

DR. FRAZER mentioned that he had seen about four instances of similar intussusceptions. In one case at least four invaginations occurred. There were no symptoms during life to attract notice, and no evidences of inflammatory deposit apparent; they appeared due to irregular action of the muscular fibres, before complete extinction of movement in the dying person.

DR. M'WEENEY mentioned two similar cases which he had lately met with in the *post-mortem* room of the Mater Misericordiæ Hospital. They were both adults; both had died of lingering disease—one of valvular disease of the heart, and the other of pleural effusion. In neither was there any symptom indicating intussusception noticed during life; and in neither was there any reaction in the shape of either congestion or inflammation observed *post-mortem*. Orth, in his work on pathological anatomy, states that these agonal intussusceptions are met with very frequently in children who have suddenly died of brain lesions. The observations laid before the Section that evening would go to show that it was not uncommonly found in adults dying of other affections.

Fibro-sarcoma of Neck of Hen.

MR. PATTESON showed a specimen obtained from a fowl in whom the growth had been present for about a year. The tumour was about the size of a large walnut, lying in front of the windpipe, and firmly adherent to the overlying skin. It had been at one period very vascular, and bled freely when pecked at by the other fowl. The growth apparently originated in the subcutaneous tissue of the neck, and though growing backwards and involving the muscular structures, did not give rise to any pressure symptoms in the trachea or œsophagus. On section it was found to be extremely dense in consistence and of light yellowish colour, and microscopic examination showed that it was composed of very thick bundles of fibrous tissue, in the interspaces of which collections of small round cells of embryonic type were freely scattered. Its local malignancy was shown by the invasion of the muscular bundles by a small-celled sarcomatous infiltration. The appearances very closely resemble those seen in the drawing in Mr. Bland Sutton's "Evolution and Disease" of a sarcoma in a fowl (p. 237).

SECTION OF SURGERY.

President—H. G. CROLY, President of the Royal College of Surgeons in Ireland.

Sectional Secretary—R. L. SWAN, F.R.C.S.I.

Friday, December 11, 1891.

The PRESIDENT in the Chair.

Some Cases of Artificial Anus.

MR. THOMSON read a paper on the above subject. In three case he had opened the ileum for acute obstruction, and in five the colon by anterior incision, for malignant disease. Of the former group two died, and in the second group all recovered. He pointed out that the cause of the greater mortality in so-called enterotomies was largely to be attributed to the fact that these operations were usually done in acute obstruction, so that the shock of operation was added to a profound shock already existing. In two cases he had opened the colon some days after it had been fixed in the wound, and he advocated this method where feasible. In one case he had fixed the colon by transfixing its ligament with a pin, which lay transverse to the wound, upon the abdominal wall. This operation only occupied a few minutes. He pointed out that the colon was not always readily found, but he held that the balance of advantages lay with the anterior as compared with the lumbar operation.

MR. THORNLEY STOKER expressed himself strongly in favour of the anterior operation, which for nearly every reason he conceived to be the logical one, and with due precaution, and in spite of statistics, not more immediately dangerous. He also argued in favour of the performance of colotomy in cases of cancer of the rectum as early as possible, and that the procedure should not be delayed until malignant obstruction had taken place. He stated that while it was desirable to draw the bowel thoroughly into the wound and secure it there, by the pin passed through the mesentery, as suggested by Mr. Thomson, or otherwise, he held this point as one of minor importance. It is sometimes difficult to perform this manœuvre owing to a short or fat mesentery, and it really does not matter much, as the distal lumen of the bowel always contracts, and it is found that even in cases where fluid can be injected from the rectum through the artificial anus, fæces do not pass in the opposite direction. Mr. Thornley Stoker also mentioned that he had of late adopted the practice in laparo-colotomy of securing the bowel in such a position that its distal portion is secured at the upper end of the abdominal wound and its proximal part at the lower end of the wound. When this can be done without twisting the gut—and it can generally be so done where

the convoluted sigmoid flexure is the seat of operation—the effect is to make a sort of *cul-de-sac* on the proximal side of the anus in which fæces become stored and are retained by gravitation. The fæces are then more likely to adopt the method of a periodic overflow and to avoid the more constant discharge which is often so troublesome, and which is more likely to occur when from the superior position of the proximal part of the bowel gravitation helps the continual discharge. This point he considered a novel one, and by attention to it he had added materially to the comfort of those patients in whom he had been enabled to practise it. He stated that this practice should only be pursued where it could be carried out by placing the bowel in the requisite position without any kink or twist.

MR. MYLES congratulated Mr. Thomson on the success of his cases, and commenting on them expressed some regret that Mr. Thomson had not said anything of the operation as an antecedent to the operation of rectal excision. Mr. Myles then mentioned a very successful case in which he had assisted Mr. Dwyer at Jervis-street Hospital to remove the rectum subsequently to a colotomy. Referring to Mr. Thornley Stoker's suggestion to turn the gut upside down so as to have a pouch below the aperture, he stated, in every case where the mesentery was of normal length, that part of the colon which lay between the descending colon and the new aperture descended into the pelvis so as to make a fairly effective pouch. Mr. Myles commended the use of the pin, asserting that no other method yet devised was as efficient in producing a valve so as to completely occlude the lower aperture of the bowel and prevent irritation of the cancerous sore in the rectum.

The PRESIDENT said he had performed colotomy in 15 cases by the lumbar method. No special difficulty in finding the bowel or trouble from the peritoneum. Two deaths. Several of the cases lived a year. One case was at work as Corporation labourer at end of two years; no fœtor. Posterior aspect more natural than anterior. No excoriation of skin. Early operation important. Early examination of bowel with finger most important. In all cases of rectal trouble the rectum should be explored with the finger. He operated on one case which had been treated by a physician as one of dysentery before she came to the City of Dublin Hospital. Early colotomy stays the progress of the disease.

MR. WHEELER had performed both anterior and lumbar colotomy. He gave the preference to the latter.

MR. THOMSON, in reply, said he agreed with Mr. Thornley Stoker that the pin was not available in all cases. He had stated this in his paper. If the mesentery were too short to allow the bowel to be brought outside the wound, the pin ought not to be used; but where a suitable case presented, the pin was undoubtedly most simple and convenient. He thought the four sutures which he used in addition were not neces-

sary; but this was the first time he had used the pin, and he confessed that he was a little timid, and he wished to make assurance doubly sure. He had not dealt with the question of excision of the rectum in relation to colotomy, because that was a subject somewhat foreign to his paper, but it might be discussed on a future occasion. The President and Mr. Wheeler were in favour of the lumbar operation. He (Mr. Thomson) had admitted that there were some cases which were suitable for that operation; but he still held that the balance of advantage lay with the anterior method. It was certainly more convenient for the patient, who had to attend to himself, to have the opening in front, where it could be seen, and where any possible changes could be observed.

Nephro-Lithotomy.

MR. MYLES read an interesting paper on nephro-lithotomy, giving a short account of a case in which he had removed by lumbar operation a large oxalate of lime calculus weighing 281 grains from the kidney of a young man in Jervis-street Hospital. The patient made an uninterrupted recovery, and was shown at a previous meeting of the Section.

Mr. Myles then entered into the consideration of the combined method so strongly advocated by Mr. Thornton, and pointed out that Mr. Thornton's contention that an abdominal incision converted doubt into certainty of diagnosis was by no means true, inasmuch as even in a typical case the hand in the abdomen might fail to find a stone in the kidney; and that being so in a typical case, how much more likely was it to occur in case of old standing inflammation with much thickening and matting of the tissues.

Again, the hand in the abdomen would often fail to find a stone, which could, perhaps, be easily struck by an exploring needle or by a sound in the pelvis.

Mr. Myles also discussed the several methods of removing a stone from the kidney when it was discovered that by incision through the pelvis of the ureter and that by incision through the kidney substance, pointing out that probably the danger of a permanent fistula in the one case and of shock and hæmorrhage in the other, were both exaggerated.

The speaker further expressed himself very strongly on the loose and unscientific way in which writers, even accomplished anatomists like Mr. Treves, use anatomical terms in connection with the kidney—at one moment describing the pelvis, correctly enough, as being part of the ureter, and then describing themselves as cutting through the “pelvis of the kidney.” Such looseness of language was most misleading.

MR. WHEELER said that he had performed nephrectomy on several occasions, but the communication only invited remarks upon nephro-lithotomy. He had shown calculi removed from the kidney of different individuals at this Society. He did not think that the abdomino-lumbar

operation was necessary should the operator be quite certain that only a calculus existed, and that further operative measures would be unnecessary. He was of opinion that it did afford some help in diagnosis; but the combined operation had other advantages. In one of his cases there was much difficulty in detecting the stone—a small one—and he had to puncture the kidney seven or eight times before the needle impinged upon it. He then incised the kidney with a narrow-bladed knife and dilated with his finger. There was no hæmorrhage. The wound healed kindly. A tube was introduced as far as the site of the wound in the kidney. He had not found it necessary to sound the kidney with a staff. The so-called pelvic incisions should be made with caution. In one of his cases the fat was very abundant; he applied a ligature and cut it off. In cases of abscess he introduced the tube into the kidney.

The PRESIDENT said, with reference to the difficulty of detecting the stone in the kidney by manipulation, he mentioned a case in which he operated by the abdominal incision, and though he expected stone, it was not discovered until the kidney was removed and a section made of the viscus. A large stone was discovered. There was a large abscess. No renal artery could be found. No urine was secreted from the time of operation, and the patient died the night of operation. He made an examination of the remaining kidney, *post mortem*, and found a large stone in it also. This case shows the difficulty of detecting stone before operation, and of knowing the state of the other kidney.

Mr. MYLES having replied,

The Section adjourned.

SECTION OF MEDICINE.

President—J. MAGEE FINNY, M.D.; President of the Royal College of Physicians of Ireland.

Sectional Secretary—A. N. MONTGOMERY, M.R.C.P.I.

Friday, December 18, 1891.

DR. ATTHILL in the Chair.

Ichthyosis.

DR. J. O'CARROLL exhibited a case of ichthyosis.

Card Specimen.

DR. M. A. BOYD showed as a card specimen the intestines, with perforation, from a case of enteric fever.

Some Recent Aids to the Diagnosis and Treatment of Diseases of the Stomach.

DR. H. C. TWEEDY, in a paper on Recent Aids to the Diagnosis of Diseases of the Stomach, referred to the very valuable researches of Professor Purser on the processes of digestion which he had communicated to the Academy last Session. The first mode of physical examination to which Dr. Tweedy drew attention was the "clapotement" or splashing sound; its utility was not confined to the help it might give in determining the position and size of the organ, but what was of perhaps more importance—it could give information as to the condition of the muscular layer. It was easily elicited in the epigastric region, and could, from the convexity of the lower boundary of the region in which it is audible, be differentiated from similar sounds occasionally heard in the transverse colon. Referring to another mode of examination, Dr. Tweedy records his objection to the proposal of testing the size of the stomach by the evolution within the organ of carbonic acid: the proceeding was uncertain, unreliable, and sometimes not devoid of danger. He considers this procedure, as well as that of introducing a small electric light, to be entirely superseded by insufflation, which, with obvious precautions, is both safe and satisfactory.

After referring to various contrivances for obtaining specimens of the contents of the stomach for examination, he unhesitatingly adopts the ingenious "bucket" of Dr. Einhorn, of New York; and he details the *modus operandi* whereby it can be used without causing the patient inconvenience. To guard the little receptacle against an undue proportion of mucus, he covers the open top with a film of gelatine, which will not melt till it has been a few minutes at its furthest destination. By this means the presence and amount of free hydrochloric acid and of other substances could be determined.

The question whether the percutaneous application of electricity to the abdominal walls determines peristalsis of the stomach directly or only as an effect of contraction of abdominal muscle is next discussed. The author of the paper evidently inclines to the latter view, as he describes and recommends the application of a new form of electrode devised by the inventor of the "bucket" mentioned above. It is claimed for it that it is easy to place and retain in the stomach, and perfectly under control of the operator.

MR. GEORGE FOX said that the disadvantages of Einhorn's bucket were—(1) It may be stopped by disease of the œsophagus and prevented from entering the stomach; (2) its contents may have been got in the œsophagus; (3) it will probably empty itself in the mouth; (4) it is inferior to the Abbé Spallanzini's metal capsules; and being modelled on the Abbé's capsule, Einhorn is not entitled to credit for its introduction.

DR. M. A. BOYD considered that the splash symptom mentioned by Dr.

Tweedy was of all symptoms the most reliable in all forms of dilatation of the stomach, both functional and organic. That it is a common symptom in a great many of the catarrhs of the stomach which are known as dyspepsias. Functional dilatation accompanied by this symptom is a very common affection, and will be found if looked for in most cases of anæmia or chlorosis, with the characteristic left-sided pain, even where no gastric ulceration is present. Also where the ingesta of injudicious food and much fluids lead to fermentation and distension of the muscle-wall of the stomach. Distension of the stomach from an atonic condition of its muscle, is not uncommon after long illnesses. In all these cases the splash symptom is present. In organic stricture of the pylorus from either malignant disease, contracting gastric ulcer, or fibroid induration, the most characteristic symptoms of dilatation are met with, and the splash symptom most easily obtained. When dilated from organic stricture, all portions of the stomach are stretched. In functional dilatation the only part distended is the cardiac end where the muscular tissue is most abundant, showing that muscular atony in addition to the weight of fluid ingesta are the most important factors in its causation. He regarded the splash as always indicative of some abnormal condition of the stomach.

DR. TWEEDY remarked in reply—first to Mr. Foy, that however valuable might have been the discovery of the Abbé Spallanzini, 200 years ago, in obtaining by a sponge the contents of the stomach, the contents so obtained would have been of little service to him, as the diagnostic value of chemical examinations dated practically within the last ten years. He added that from *personal* experience he could state that the introduction of Dr. Einhorn's stomach bucket was attended with little or no inconvenience; and that it was not likely to empty its contents on withdrawal from the stomach, both in consequence of the consistence of the alimentary matters withdrawn, and of the small size of the opening in the bucket; but even if some of the contents escaped, one drop was sufficient for the performance of the test for hydrochloric acid with Günzburg's phloroglucin-vanillin solution. Another objection mentioned was anticipated by Dr. Einhorn, in providing a gelatine capsule for the stomach bucket, where there was a superabundance of œsophageal mucus. In the descent to the stomach no mucus could enter the bucket in consequence of the gelatine covering, and as the bucket is full when withdrawn it is impossible that any amount of mucus could displace the stomach-contents already in the instrument.

Acute Double Pneumonia successfully treated by Bleeding and Inhalation of Oxygen.

MR. FOY read a paper on the above subject. [It will be found at page 13.]

DR. M. A. BOYD said he was glad to hear attention called by Mr. Foy to a remedy in pulmonary congestion which we did not try in such cases as often as we might. He (Dr Boyd) had only a limited experience of oxygen in lung cases, but he had tried it and considered it a most valuable remedy in disease of the heart with degeneration. He brought forward during last Session of the Academy a case of Cheyne-Stokes' respiration with degeneration of the heart, where the improvement following the inhalation of oxygen was most remarkable, the degenerated heart strengthening and the dyspnœa disappearing after it was used for some time.

DR. C. F. MOORE and the CHAIRMAN having also spoken,

MR. FOY, in reply, drew attention to the discussion in the past on the side on which pneumonic patients should be bled—Sydenham's love of bleeding in pneumonia, and Cullen's classification of bleeding—the use of oxygen in Dublin at the beginning of the century, and Dr. Reid's paper on the value of the gas in 1817—the case of General Philip Sheridan.

Some Recent Modifications in our Views of Enteric Fever and its Treatment.

DR. M. A. BOYD read a paper on some recent modifications in our views of enteric fever and its treatment, in which he regarded Murchison's classic treatise on the disease as having foreshadowed all that bacteriology has since discovered regarding it. The discovery of the typhoid bacillus by Koch and Eberth had, however, narrowed the issues and enabled us to regard the disease as an acute infective one, in which light it was not previously considered. Since that discovery was made our views as to the ætiology of the disease have considerably changed, and the time had come when taking advantage of it and of the life-history of the bacillus, with its more general growth in the autumn and its prevalence during this season in drinking water and milk, as pointed out by Gaffky, to consider the manner in which it infected the intestinal glands, and to suggest some rational means for its treatment. Alluding to the want of evidence of its infective character, by its not producing the characteristic disease after inoculation experiments, Dr. Boyd pointed out that these were performed from its aerobic cultivation, but that it existed in the intestines as an anærobic bacillus, and in the former condition it might be incapable of infecting, and yet capable of doing so in its latter condition. That we were constantly taking this bacillus into our intestines by water or other media there could be no doubt, and further experiments showed that it was identical with the *Bacterium termo* which was a constant resident there. Why, then, were not all infected by it? The answer to this question lay in the fact that all bacilli were harmless until they overcome the vital resistance of the blood and tissues, in some situation weakened by injury or disease, and by growing on this weakened

part produced the ptomains or toxins which poisoned the blood. This fact, numerous bacteriological experiments had proved. Alluding to its prevalence in the autumn, he pointed out that the constant occurrence of intestinal catarrh and gastric troubles at this period produced that amount of epithelial proliferation and lowering of the vital resistance in the intestines favourable to the invasion of the bacilli.

That this intestinal catarrh was a constant precursor and accompaniment of the disease was long ago pointed out by Murchison. Added to this, the increased growth of the bacillus on the fermenting intestinal contents, resulting from this proliferation, and the generation of their chemical toxin during growth, made the intestinal glands—always easily choked like all adenoid tissue when attacked by bacilli—fall an easy prey.

This infiltration of the glands of the intestine by the typhoid bacillus runs its course in the first fortnight of the disease from the onset of fever, and this was the normal length of typhoid from the pathological point of view. Pus-producing micrococci now invade the necrotic tissue, and from this period forward the disease is only one of septicæmia due to the toxins they produce. The character of the typhoid temperature after the second week shows this to be the case.

We must therefore regard two forms of bacteria as playing a part in the course of enteric fever—the typhoid bacillus in the early stage and the suppurative micrococci in the latter stages. This fact suggested antiseptics as the most rational method of treatment in addition to suitable diet.

The gaseous form of antiseptics seemed to him the most thorough and suitable, as it permeated the tissues and entered the blood; and of these chlorine gas held first place, administered in some alkaline medium that would part with it readily in the intestines. One-fourth of the cases treated in this manner ended their fever on the fourteenth to the sixteenth day—a result which could not be achieved by any other method.

A resolution that the discussion on Dr. Boyd's paper should be postponed until the next meeting having been proposed by Dr. N. FALKINER, seconded by Dr. C. F. MOORE, and carried,

The Section then adjourned.

CLINICAL RECORDS.

Notes on Uncommon Forms of Skin Diseases.^a By R. GLASGOW PATTESON, M.B., Univ. Dubl.; Fellow and Member of Court of Examiners, Royal College of Surgeons in Ireland; Surgeon in Charge of the Skin Department, St. Vincent's Hospital, Dublin.

VI. SYMMETRICAL GANGRENE OF THE EXTREMITIES ("RAYNAUD'S DISEASE").

THE affection of the extremities—feet, hands, ears, and tip of nose—which goes by the name of Raynaud, is still sufficiently obscure in its pathology to allow us to group it, provisionally, at least, along with those cutaneous affections which are characterised by the phenomena of necrosis; and as the features which first led to its recognition as a morbid entity are those of a limited and usually superficial gangrene affecting the most peripheral parts of the body, we may be allowed to consider it here under the heading of rarer forms of skin disease.

CASE.—Mary W., aged twenty-two, a parlourmaid, came to St. Vincent's Dispensary on the 22nd of October, complaining of a "deadness in her hands." Exactly twelve months previously she first began to suffer from "dead fingers," and up to that time her health had been fairly good. She had had one or two slight attacks of bronchitis, and five years previously had suffered from an attack of rheumatism lasting six weeks, which she believed to be rheumatic fever, but which, at any rate, had left no appreciable heart damage. About a fortnight before the first attack of numbness of the fingers came on, she received a severe shock, being left alone in the house at night and fancying she heard it being broken into by burglars. She was very nervous and felt out of sorts for about a week, but afterwards felt as well as before. At this time she was suffering from some menstrual irregularities—at first amenorrhœa, and afterwards too frequent periods with very scanty discharge—which continued for about six months, when she went under medical treatment, and has since been practically well. The history of the onset of her affection is as follows:—

About a fortnight after the shock above referred to, she awoke one morning to find one of her hands "asleep," and concluded she had been lying on it. The fingers from the first inter-phalangeal joint down were white, and quite numb and stiff, like "dead fingers," but instead of disappearing quickly this condition persisted for some little time, the natural

^a Continued from the number of this Journal for September, 1891. Vol. XCII. No. 237, p. 244.

colour being then gradually restored with slight pain and tingling. At this time she had a good deal of sewing to do, and she now occasionally found her fingers getting quite numb and powerless while so occupied. Shortly after this—from about the middle of November, 1890—she suffered from constantly-repeated attacks, which came on after rising in the mornings, or in the evenings when it got cold, or during the day on washing her hands in cold water or bringing them in contact with any cold substance. The sequence of events was always the same: at first, pallor and deadness, with a numb feeling in the fingers, which, after persisting for a variable time, was succeeded by a sharp tingling pain, with swelling and lividity of the extremities of the fingers, which became of a dark, greyish-purple colour. In these attacks the pallor and numbness (“local syncope”) affected all the fingers equally from the first inter-phalangeal joint, but the second stage of pain and congestion (“local asphyxia”) affected principally the terminal phalanges, the little fingers of both hands always escaping. At this time severe darting pains about the shoulders and down the forearms often preceded the onset of the local manifestations. About the middle of December the paroxysms became much more frequent, and were excited by the least exposure to cold, so that now the fingers were constantly swollen and dark in colour, and most of the time excessively painful and tender. For the relief of this poultices were applied, with the result that, though the pain disappeared, blisters containing clear serum formed over all the terminal phalanges, except those of the little fingers, followed by desquamation of the skin and complete shedding of the nails. Small ulcerations were left after the separation of the dead skin at the tips of the fingers just beneath the free edge of the nails; and this condition remained unchanged for some time, associated with a swollen and extremely sensitive state of the fingers, so that she was quite unable for any heavy work. It was not until June of the present year that they had quite returned to their normal condition, and even during the summer attacks of local asphyxia could be at any time induced by immersing the hands in very cold water. The attacks, however, were very slight, and she was quite able for her work without any distress.

In October, however, with the onset of colder weather the pains and numbness returned, though not with the same severity as before. The fingers are now affected chiefly in the mornings and evenings, less frequently during the day; and the attacks also differ in an important particular from those to which she was formerly subject, in that the stage of “syncope” is now absent, or so transient as to escape notice, and the pain, swelling, and blueness are the features that first arrest her attention, not as previously the pallor and numbness. The fingers when I first saw her were in this condition: they seemed somewhat swollen but were not cedematous, were a peculiar slaty-blue colour, not the livid purple of

ordinary venous congestion, and were slightly painful, though sensation was everywhere normal, and they were not tender on pressure. The scars left by the previous ulceration on the tips of the index, middle, and ring fingers of both hands presented a cracked surface, and were apparently on the point of breaking down into small ulcers. There was no history obtainable of ague or hæmoglobinuria—conditions which have been associated with the affection in a certain number of cases.

While a patient in the hospital^a various remedies, based on the supposed pathology of the disease, were tried by Dr. M'Hugh; but the measure of success obtained was limited and transitory. This has also been the experience of all previous observers. In order to appreciate the *rationale* of the measures adopted it will be necessary here to briefly review the pathological theories which have been put forward to explain the essential phenomena of the disease.

In Raynaud's original thesis, published in 1862, he refers the phenomena to a condition of "capillary spasm," which occurs in subjects who are "characterised by a nervous predominance." "In the simplest cases," he writes, "those in which the malady remains, if I may so say, in a rough state, the exaggerated peristaltic contraction of the capillaries drives the blood before it, the extremities become pale, withered-looking, and insensible. This is the 'dead finger.' But this phenomenon does not persist long enough for gangrene to follow. To contraction succeeds relaxation, the circulation is re-established, and everything returns to the normal state after a period of reaction more or less painful. Such is *local syncope*, in which the muscles participate in the contraction of the arterioles. *Local asphyxia* is only a more advanced condition. After an initial period of capillary spasm there occurs a period of reaction; but it is incomplete reaction. The vessels which return first to their primary calibre, or even beyond, are naturally those which present in their structure the fewest contractile elements—viz., the venules. At the moment when these are opened, the arterioles being still closed, the venous blood, which had been at first driven back into the great trunks of the dark blood system, flows again into the finest vascular divisions, and then the extremities will take on that tint, varying from blue to black, which is a certain index of the presence of venous blood in the capillary network. . . . This state may be chronic, and the spasm of the vessels may only have a limited duration, so as to return in irregular or intermittent attacks. . . . Finally, it may happen, although much more rarely, that the capillary spasm comes on all at once with an intensity and a duration altogether extraordinary. Syncope and local asphyxia succeed one another rapidly. The venous blood becomes insufficient to

^a The girl was admitted, November 3rd, into St. Vincent's Hospital, under the care of my colleague, Dr. M'Hugh, and by his kindness I was enabled to show her at the Dublin Biological Club, and to obtain the notes of her case while under treatment.

nourish the parts; the colour becomes deeper and deeper; small blood-stained infiltrations take place through the walls of the venules; these walls may themselves become granular; in one word, there is confirmed gangrene, and gangrene which may go on to the fall of many ends of fingers or toes.”^a In a paper, embodying subsequent researches, published in the *Archives Générales de Médecine*, January, 1874, Raynaud carried his pathological theory a step further back to the central nervous system, and sums it up as follows:—“I would say that in the present state of our knowledge, local asphyxia of the extremities ought to be considered as a neurosis characterised by enormous exaggerations of the excito-motor energy of the gray parts of the spinal cord which control the vaso-motor innervation.”^b Based upon this theory was his plan of treatment by continuous descending electrical currents applied over the vertebral column, so as to act directly on the cord, one pole—the positive—being placed at the nape of the neck, and the other—the negative—over the lumbar enlargement, in combination with the application of the constant current directly to the extremities affected. In this way, Raynaud says, “the action exercised by the current in the cord appears to consist in an enfeeblement of the excito-motor power, whence there results a corresponding relaxation of the reflex vascular contractions,” and so, applied during the stage of asphyxia, the occurrence of the consecutive gangrene may be prevented. In a valuable paper on the subject (*Illustrated Medical News*, Vol. III., 1889, p. 178), Dr. Thomas Barlow speaks highly of the value of what may be called the “electrical bath” method of treatment during the continuance of the paroxysm. “The blue extremity may be submerged in a basin of lukewarm salt and water, and one pole may be placed in the water and the other moved about on the limb above the level of the water. The current should be rapidly reversed, made, and broken, and the patient should be encouraged to make voluntary flexions and extensive movements of the limb during the time that it is being galvanised. This should be persevered with till the colour of the extremity has become quite red. . . . The galvanism and shampooing should be done at least once a day until substantial improvement is obtained, and then this should be maintained by the patient’s own shampooing. Lamp baths, vapour baths, or, if they can be got, Turkish baths, should be tried. Diffusible stimulants are of doubtful benefit, and so are narcotics.”

The theory of vascular spasm receives a certain amount of support from two of Raynaud’s cases in which marked visual disturbances accompanied the peripheral paroxysms. In the first case “the patient affirms that his sight is good in the two eyes during the attack, but that during

^a “Selected Monographs.” Raynaud on “Local Asphyxia.” New Sydenham Society’s Translation. 1888. P. 144.

^b Loc. cit. P. 182.

the period which follows, and whilst the fingers return progressively to their natural colour, the sight, especially of the left eye, becomes troubled and confused, recovering at the moment when a new attack supervenes." On ophthalmoscopic examination, during the period of reaction, there were found in the left eye distinct narrowing of the central artery of the retina and of its branches near the papilla, with dilation and marked pulsation in the veins, and here and there partial contractions in the more peripheral parts of the arteries, giving them a filiform outline. In the right eye, in which vision was less affected, the same appearances were found in a slighter degree. During the stage of cyanosis the venous pulsations persisted in both eyes, while the arteries did not recover their normal calibre in all their extent but presented partial diminutions in size, giving them a beaded appearance. In the second case the facts were still more striking. This patient experienced "at the moment of the commencement of the cyanosis a notable obscuration of sight, which disappeared at the same time that the face and the hands returned to their normal colour." Examined during a severe attack it was found that at the commencement a narrowing of the arteries of the fundus oculi could be clearly seen, with a subsequent distinct widening at the moment when reaction began. The retinal veins were for the most part turgid, but showed no appreciable pulsation.^a

The only other theory which has at all held the field is that the phenomena are the result of a *peripheral neuritis*. In a few cases interstitial inflammation and degeneration of nerve fibres have been found, but these cases are quite exceptional, and in the great majority of those that have been examined no nerve alterations were detected. It seems, moreover, on the face of it, incredible that phenomena so invariably paroxysmal and intermittent in their characters should be primarily due to an organic and progressive lesion of peripheral or trophic nerves; and it is possible that in these cases the nerve degenerations may have been secondary to an alteration in the nutrition of the parts dependent on the circulatory deficiencies.

Dr. Affleck has published a case in the *British Medical Journal*, December 8, 1888, in which degeneration and interstitial inflammation were found in the nerves leading to the affected part; but on the other hand, Dr. Barlow (*loc. cit.* p. 127) records a case in which the gangrene was so deep and so spreading in type that amputation in the middle third of the thigh was resorted to as a last resource, and in which, subsequent to removal, careful investigation was made into the condition of the nerves and arteries of the limb. The anterior and posterior tibial and plantar nerves were examined, and also portions of muscle with some of the smaller nerve-twigs." No morbid changes were found. "There is no obvious increase of connective tissue in perineurium or endoneurium,

^a Raynaud. *Loc. cit.* P. 165.

the axis cylinders are well marked, and there is no segmentation of myelin." As regards the state of the vessels: "There is undoubtedly some thickening of the outer and middle coat, but it appears to a great extent recent." The arteries were found to be universally thrombosed but this thrombosis was regarded as recent, though the extent and characters of the clot are not definitely given. "There is a remarkable contortion and infolding in some sections of the elastic lamina, and this seems to have followed upon the shrinking of the thrombus. I think some of the nuclear overgrowth of the middle coat has been consecutive to this shrinkage. . . . The veins show some thickening of their walls, quite as much as, if not more than, the arteries." It will be seen that whatever may have been the cause of these arterial changes no neuritis at any rate was present. The account is too meagre to form any opinion on it, but it may be remarked that the appearances found correspond in a marked manner with those met with in syphilitic periarteritis, but it is stated no history of any venereal affection was obtainable.

Such discrepancies, then, existing as to the grosser lesions found in these cases, we may provisionally assume that the most probable theory is that put forward by Raynaud, viz., *the theory of arteriole spasm*. For here it may be remarked that a theory based on the occurrence of arteritis or periarteritis is just as inadequate to explain the phenomena met with, as is a theory based on the presence of a nerve degeneration or a neuritis. Either proposition lands us in a dilemma from which there is no escape. Accordingly rational treatment in the light of our present knowledge must travel on two lines: treatment applied during the occurrence of the paroxysm to relieve the vascular spasm and restore the balance of the circulation, and treatment applied during the intervals to maintain the efficiency of the peripheral circulation, and to endeavour to counteract the faulty habit which has been engrafted on the vaso-motor centre.

The method of treatment by shampooing and the electrical bath has been already referred to; both it, and the application of the constant current by brushes to the affected parts have been found useful during the acute period of the attacks. Another method which has not, so far as I know, been tried in these countries, is that of the "oxygen bath." It is applied as follows:—Each affected extremity is introduced into a chamber, made of indiarubber, which being as hermetically as possible attached to the limb above at one end, is by its other end connected with a tube and reservoir containing oxygen, by means of which from time to time fresh supplies of oxygen are admitted in the indiarubber chamber, and so allowed to bathe the asphyxiated parts.^a No directions are given as to the period at which this bath is to be given, but it is presumably during the stage of asphyxia, the probable rationale being to promote by an

artificial cutaneous respiration the oxygenation of the stagnating venous blood.

Treatment.—The first method tried by Dr. M'Hugh was the application of cold to the cervical spine, combined with elevation of the hands and warmth. An ice-bag was applied to the back of the neck; the hands were enveloped in cotton-wool and were folded across the chest and kept fixed to the opposite shoulders. The first application was followed by an attack of blueness and pain in the fingers, which lasted for about an hour, but was followed by a period of great comfort and free from any attack, which lasted for thirty-six hours. The ice was then removed. The usual attacks followed its withdrawal; and a second application induced a similar series of phenomena, except that the preliminary stage of asphyxia did not last so long. The cold, however, it was observed, always prevented any attack of the fingers subsequently, but had no curative or preventive influence on the paroxysms. Blisters applied to the spine were next tried but without apparent effect, and she was then put upon five minim doses of trinitrin (one per cent. solution) three times a day. This treatment, combined with the local warmth, while continued was capable of preventing any attacks, and she expressed herself as feeling much better. One curious point was noticed while she was taking the trinitrin—that the tips of the fingers, which had previously desquamated, again became covered with freely-separating flakes of skin, leaving the parts underneath of a more healthy colour and consistence. But it was also found that—as, indeed, is the experience of other observers—the effect of the drug was but slight, and any exposure to cold was still liable to produce an attack. In this case the paroxysm—the period during which electricity has been found of decided benefit—was too short and the symptoms not sufficiently urgent to lead me to expect any benefit from the “electrical bath” treatment, and consequently it was not tried. The girl's condition was decidedly ameliorated while in hospital by rest, good food, warmth, and the avoidance of exciting causes, and the tips of the fingers lost to a great extent the characters and consistence of scar tissue and became softer and more pliable; but when she left hospital on November 26th it could not be said that she was a single step nearer a permanent cure than when admitted a month previously.

Disappointing as this result undoubtedly is, it will be found to be identical with those obtained by previous observers, and it may be safely said that the therapeutics of the affection equal in obscurity and unsatisfactoriness the theories that have been put forward to explain its ætiology.

SANITARY AND METEOROLOGICAL NOTES.

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VITAL STATISTICS

For four Weeks ending Saturday, December 5, 1891.

The deaths registered in each of the four weeks in the sixteen principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

TOWNS	Weeks ending				TOWNS	Weeks ending			
	Nov. 14.	Nov. 21.	Nov. 28.	Dec. 5.		Nov. 14.	Nov. 21.	Nov. 28.	Dec. 5.
Armagh -	6·3	12·6	37·8	25·2	Limerick -	40·6	22·4	19·6	21·0
Belfast -	29·1	28·5	34·0	45·6	Lisburn -	17·2	17·2	21·5	21·5
Cork -	39·9	25·9	30·8	43·4	Londonderry	14·4	27·2	33·6	22·4
Drogheda	39·6	8·8	8·8	8·8	Lurgan -	18·4	18·4	36·8	27·6
Dublin -	28·2	32·3	29·3	33·8	Newry -	23·4	15·6	11·7	15·6
Dundalk -	7·8	19·5	11·7	3·9	Sligo -	10·4	26·0	20·8	15·6
Galway -	38·0	15·2	57·0	11·4	Waterford -	2·4	38·4	19·2	19·2
Kilkenny	9·4	42·3	15·6	23·5	Wexford -	13·5	36·0	22·5	36·0

In the week ending Saturday, November 14, 1891, the mortality in twenty-eight large English towns, including London (in which the rate was 19·6), was equal to an average annual death-rate of 20·6 per 1,000 persons living. The average rate for eight principal towns of Scotland was 28·4 per 1,000. In Glasgow the rate was 29·5, and in Edinburgh it was 26·0.

The average annual death-rate represented by the deaths registered during the week in the sixteen principal town districts of Ireland was 27·6 per 1,000 of the population (unrevised) according to the recent Census.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 2·4 per 1,000, the rates varying from 0·0 in eleven of the districts to 5·2 in Sligo—1 of the 2 deaths registered in that district having been caused by enteric fever. Among the 143 deaths from all causes registered in Belfast are 1 from measles, 1 from scarlatina, 6 from whooping-cough, 1 from simple continued fever,

5 from enteric fever, and 6 from diarrhœa. The 57 deaths in Cork comprise 1 from diphtheria and 1 from enteric fever. The 29 deaths in Limerick comprise 1 from whooping-cough and 2 from diarrhœa.

In the Dublin Registration District the registered births amounted to 139—75 boys and 64 girls; and the registered deaths to 192—100 males and 92 females.

The deaths, which are 18 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 28·8 in every 1,000 of the population. Omitting the deaths (numbering 4) of persons admitted into public institutions from localities outside the district, the rate was 28·2 per 1,000. During the first forty-five weeks of the current year the death-rate averaged 25·1, and was 2·0 under the mean rate in the corresponding period of the ten years 1881–1890.

The number of deaths from zymotic diseases registered is 21, being 12 under the number for the preceding week and 4 below the average for the 45th week of the last ten years. The 21 deaths comprise 1 from influenza, 5 from whooping-cough, 2 from simple continued and ill-defined fever, 4 from enteric fever, 4 from diarrhœa, and 2 from erysipelas.

The number of cases of enteric fever admitted to hospital is 25, being a decline of 13 as compared with the admissions for the preceding week. Twenty-five enteric fever patients were discharged, 3 died, and 188 remained under treatment on Saturday, being 3 under the number in hospital on Saturday the 7th.

The hospital admissions include, also, 5 cases of scarlatina and 2 cases of measles, but no cases of typhus were received. Ten cases of scarlatina, 3 of measles, and 3 of typhus remained under treatment in hospital on Saturday.

Deaths from diseases of the respiratory system amount to 43, being 6 in excess of the average for the corresponding week of the last ten years and 8 over the number for the week ended November 7. The 43 deaths comprise 26 from bronchitis, 10 from pneumonia or inflammation of the lungs, and 3 from pleurisy.

In the week ending Saturday, November 21, the mortality in twenty-eight large English towns, including London (in which the rate was 20·1), was equal to an average annual death-rate of 20·7 per 1,000 persons living. The average rate for eight principal towns of Scotland was 31·2 per 1,000. In Glasgow the rate was 34·4, and in Edinburgh it was 28·6.

The average annual death-rate in the sixteen principal town districts of Ireland was 28·7 per 1,000 of the population (unrevised) according to the recent Census.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 2·8 per 1,000, the rates varying from 0·0 in eight of the districts to 6·3 in Armagh—1 of the 2 deaths from

all causes registered in that district having been caused by diarrhœa. Among the 140 deaths from all causes registered in Belfast are 1 from measles, 2 from scarlatina, 5 from whooping-cough, 3 from diphtheria, 5 from enteric fever, and 3 from diarrhœa. The 37 deaths in Cork comprise 1 from whooping-cough, 1 from enteric fever, and 2 from diarrhœa. The 17 deaths in Londonderry comprise 1 from diphtheria and 2 from diarrhœa.

In the Dublin Registration District the registered births amounted to 162—71 boys and 91 girls; and the registered deaths to 226—108 males and 118 females.

The deaths, which are 48 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 33·9 in every 1,000 of the population. Omitting the deaths (numbering 11) of persons admitted into public institutions from localities outside the district, the rate was 32·3 per 1,000. During the first forty-six weeks of the current year the death-rate averaged 25·3, and was 1·8 under the mean rate in the corresponding period of the ten years 1881–1890.

Twenty-four deaths from zymotic diseases were registered, being 4 over the average for the corresponding week of the last ten years, and 3 in excess of the number for the week ended November 14. They consist of 1 from measles, 1 from typhus, 3 from whooping-cough, 1 from cerebro-spinal meningitis, 12 from enteric fever (being 8 over the number from that disease for the preceding week, but 2 under the number for the week ended November 7), 3 from diarrhœa, 1 from dysentery, and 2 from erysipelas.

During the week ended November 7, 38 cases of enteric fever were admitted to hospital. In the following week the admissions fell to 25, and this week they declined to 22, being the lowest number of admissions for any week since that ended October 3. Thirty-seven enteric fever patients were discharged, 3 died, and 170 remained under treatment on Saturday, being 18 under the number in hospital at the close of the preceding week.

The hospital admissions for the week include, also, 5 cases of measles and 1 each of scarlatina, but no cases of typhus were received. Seven cases of measles, 7 of scarlatina, and 2 of typhus remained under treatment in hospital on Saturday.

Deaths from diseases of the respiratory system, which had risen from 35 in the week ended November 7, to 43 in the following week, further rose this week to 58, or 19 over the average for the corresponding week of the last ten years. The 58 deaths comprise 39 from bronchitis and 14 from pneumonia or inflammation of the lungs.

In the week ending Saturday, November 28, the mortality in twenty-eight large English towns, including London (in which the rate was 19·9),

was equal to an average annual death-rate of 20·5 per 1,000 persons living. The average rate for eight principal towns of Scotland was 31·7 per 1,000. In Glasgow the rate was 30·8, but in Edinburgh it was as high as 35·3.

The average annual death-rate represented by the deaths registered in the sixteen principal town districts of Ireland was 29·6 per 1,000 of the unrevised population, based on the Census of 1891.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 2·5 per 1,000, the rates varying from 0·0 in nine of the districts to 10·4 in Sligo—the 4 deaths from all causes registered in that district comprising 2 from diphtheria. Among the 167 deaths from all causes registered in Belfast are 2 from measles, 6 from whooping-cough, 4 from enteric fever, and 2 from diarrhoea. The 44 deaths in Cork comprise 1 from whooping-cough, 1 from enteric fever, and 1 from diarrhoea.

In the Dublin Registration District the registered births amounted to 183—97 boys and 86 girls; and the registered deaths to 202—100 males and 102 females.

The deaths, which are 12 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 30·3 in every 1,000 of the population. Omitting the deaths (numbering 7) of persons admitted into public institutions from localities outside the district, the rate was 29·3 per 1,000. During the forty-seven weeks of the current year the death-rate averaged 25·4, and was 1·7 under the mean rate in the corresponding period of the ten years 1881–1890.

Twenty-six deaths from zymotic diseases were registered, being 2 over the number for the preceding week and also 2 in excess of the average for the forty-seventh week of the last ten years. They comprise 2 from influenza, 4 from whooping-cough, 1 from diphtheria, 8 from enteric fever, 6 from diarrhoea, and 1 from erysipelas.

The number of cases of enteric fever admitted to hospital during the week is 20, being 2 under the number for the preceding week, 5 under that for the week ended November 14, and 18 under that for the week ended November 7. Twenty-eight enteric fever patients were discharged, 3 died, and 159 remained under treatment on Saturday, being 11 under the number in hospital at the close of the preceding week.

The hospital admissions for the week include also 4 cases of measles and 1 case of scarlatina; 11 cases of measles and 6 of scarlatina remained under treatment in hospital on Saturday. No cases of typhus were admitted during the week, nor were there any cases of that disease in hospital at the close of the week.

Deaths from diseases of the respiratory system, which had risen from 43 in the week ended November 14, to 58 in the following week, fell

this week to 55, but this number is 13 over the average for the corresponding week of the last ten years. The 55 deaths comprise 42 from bronchitis and 9 from pneumonia or inflammation of the lungs.

In the week ending Saturday, December 5, the mortality in twenty-eight large English towns, including London (in which the rate was 21·2), was equal to an average annual death-rate of 22·6 per 1,000 persons living. The average rate for eight principal towns of Scotland was 32·2 per 1,000. In Glasgow the rate was 31·3, and in Edinburgh it was 38·1.

The average annual death-rate in the sixteen principal town districts of Ireland was 34·6 per 1,000 of the population (unrevised) according to the recent Census.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 1·7 per 1,000, the rates varying from 0·0 in thirteen of the districts to 3·1 in Belfast—the 224 deaths from all causes registered in that district comprising 1 from scarlatina, 8 from whooping-cough, 2 from enteric fever, and 4 from diarrhoea. There are also among the 224 deaths 26 from phthisis and 106 from diseases of the respiratory system.

In the Dublin Registration District the registered births amounted to 183—97 boys and 86 girls; and the registered deaths to 231—116 males and 115 females.

The deaths, which are 46 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 34·7 in every 1,000 of the population. Omitting the deaths (numbering 6) of persons admitted into public institutions from localities outside the district, the rate was 33·8 per 1,000. During the forty-eight weeks of the current year, ending with Saturday, December 5, the death-rate averaged 25·6, and was 1·5 under the mean rate in the corresponding period of the ten years 1881–1890.

The number of deaths from zymotic diseases registered is 22, being equal to the average for the corresponding week of the last ten years, but 4 under the number for the week ended November 28. The 22 deaths comprise 3 from influenza (including 2 cases in which the disease was complicated with bronchitis), 2 from whooping-cough, 7 from enteric fever, 2 from diarrhoea, 2 from dysentery, and 3 from erysipelas.

Twenty-nine cases of enteric fever were admitted to hospital, being 9 over the admissions for the preceding week, 7 over the number for the week ended November 21, and 4 over that for the week ended November 14, but 9 under that for the week ended November 7. Thirty-four enteric fever patients were discharged, 5 died, and 149 remained under treatment on Saturday, being 10 under the number in hospital at the close of the preceding week.

The hospital admissions for the week include, also, 1 case of scarlatina

and 2 cases of typhus, but no cases of measles were received. Nine cases of measles, 6 of scarlatina, and 2 of typhus remained under treatment in hospital on Saturday.

Deaths from diseases of the respiratory system, which had fallen from 58 in the week ended November 21, to 55 in the following week, rose this week to 79, or 36 over the average for the 48th week of the last ten years. The 79 deaths comprise 51 from bronchitis and 20 from pneumonia or inflammation of the lungs.

METEOROLOGY.

*Abstract of Observations made in the City of Dublin, Lat. 53° 20' N.
Long. 6° 15' W., for the Month of November, 1891.*

Mean Height of Barometer,	-	-	-	29.782 inches
Maximal Height of Barometer (on 5th, at 9 a.m.),				30.693 „
Minimal Height of Barometer (on 11th, at 7 30 a.m.)				28.524 „
Mean Dry-bulb Temperature,	-	-	-	42.8°.
Mean Wet-bulb Temperature,	-	-	-	41.2°.
Mean Dew-point Temperature,	-	-	-	39.4°.
Mean Elastic Force (Tension) of Aqueous Vapour,	-			.242 inch.
Mean Humidity,	-	-	-	88.2 per cent.
Highest Temperature in Shade (on 18th)	-			57.8°.
Lowest Temperature in Shade (on 24th),	-			31.4°.
Lowest Temperature on Grass (Radiation) (on 24th),				25.0°.
Mean Amount of Cloud,	-	-	-	54.7 per cent.
Rainfall (on 15 days),	-	-	-	2.911 inches.
Greatest Daily Rainfall (on 10th),	-	-	-	1.229 inches.
General Directions of Wind,	-	-	-	S.W., W.

Remarks.

Opening with a week of quiet, fine, dry anticyclonic weather, this month ultimately proved very cold and changeable. On the 11th a disastrous cyclone crossed England from S.W. to N.E., causing destructive gales from different quarters and downpours of rain in many places. After this date temperature remained low to the end of the month, with one or two passing exceptions, and rain fell frequently, though not as a rule, heavily.

There was an overwhelming preponderance of southwesterly wind during the month, but the sky—at least in Dublin—was often clear, and temperature ruled low.

In Dublin the arithmetical mean temperature (43.4°) was decidedly below the average (44.7°); the mean dry bulb readings at 9 a.m. and 9 p.m. were 42.8°. In the twenty-six years ending with 1890, November was

coldest in 1878 (M. T. = 38.2°), and in 1870 (M. T. = 42.2°), and warmest in 1881 (M. T. = 50.3°). In 1886, the M. T. was as high as 46.4° ; in the year 1879 (the "cold year"), it was 43.9° ; in 1887, it was as low as 42.6° ; in 1888, it was as high as 47.5° ; in 1889, it was 46.4° ; and in 1890, it was 45.3° .

The mean height of the barometer was 29.782 inches, or 0.078 inch below the corrected average value for November—namely, 29.860 inches. The mercury rose to 30.693 inches at 9 a.m. of the 5th, and fell to 28.524 inches at 7 30 a.m. of the 11th. The observed range of atmospheric pressure was, therefore, 2.169 inches—that is, nearly two inches and two-tenths.

The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 42.8° , or 5.4° below the value for October, and 13.6° below that for September, 1891. The arithmetical mean of the maximal and minimal readings was 43.4° , compared with a twenty-five years' average of 44.7° . On the 18th the thermometer in the screen rose to 57.8° —wind, S.W.; on the 24th the temperature fell to 31.4° —wind, W.N.W. The minimum on the grass was 25.0° also on the 24th.

The rainfall was 2.911 inches, distributed over 15 days—the rainfall was above, while the rainy days were below, the average. The average rainfall for November in the twenty-five years, 1865–89, inclusive, was 2.452 inches, and the average number of rainy days was 17.0. In 1876 the rainfall in November was large—3.614 inches on 20 days; in 1872, also, 3.414 inches fell on 24 days; in 1887, 3.012 inches fell on 18 days; in 1888, 6.549 inches fell on 26 days; and in 1890, 4.212 inches fell on no less than 27 days. On the other hand, the rainfall in 1889 was only .929 inch on 9 days; in 1870, only 1.218 inches were measured on but 11 days, and in 1879 only 1.251 inches on but 10 days.

High winds were noted on 9 days, and attained the force of a gale on 3 occasions—the 11th, 12th, and 28th. The atmosphere was more or less foggy in Dublin on the 6th, 7th, 13th, 14th, 15th, 23rd, 24th and 25th. Sleet fell on the 26th.

The period ended Saturday, the 7th, proved to be a very uneventful week of quiet, fine, mild, but often dull weather, with easterly winds until Friday, when a shift to the westward took place. During the entire period an anticyclone lay over the British Islands. At first the centre of this system was found over the North Sea to the northeastward of Scotland—at 8 a.m. of Sunday the barometer was as high as 30.73 inches at Aberdeen. After Wednesday, the high pressure system moved southwards, so that the easterly winds died down, giving place to calms and dull weather in Ireland and England, and to westerly winds in Norway and Scotland. On Friday, the westerly current made still greater way southwards, and on Saturday Ireland came well within the

influence of a gentle S.W. wind. Owing to the large amount of cloud, radiation was much interfered with and therefore little or no frost was felt in the British Islands. In France and Germany, on the contrary, the sky was often clear, and sharp frosts prevailed—at 8 a.m. of Friday, the thermometer read 19° at Munich and 25° in Paris. In Dublin the mean height of the barometer was 30.518 inches, pressure decreasing from 30.693 inches at 9 a.m. of Thursday (wind, E.) to 30.258 inches at 9 p.m. of Saturday (wind, calm). The corrected mean temperature was 47.7° , or 2.3° above that of the previous week. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 47.2° . On Sunday the thermometer rose to 53.8° in the screen, on Saturday it fell to 41.2° . There was no rain during the week. The prevailing wind was easterly.

No greater contrast can be imagined than that which was presented by the weather of the week ended Saturday, the 14th, to that of the previous week. Then the barometer was uniformly and continuously very high (the mean pressure being 30.518 inches), temperature was relatively high and steady, while the weather was quiet and rainless. Now, atmospherical pressure was most unstable, the mean height of the barometer was 1.317 inches below that of the former week, temperature was low and unsteady, violent gales alternated with calm and fog, and rain fell in vast quantities all over the British Islands. Gradients for S.W. winds were already established at the beginning of the week, and squalls and rain were reported from time to time. On Tuesday night a very deep depression approached the British Islands from S.W., rapidly growing deeper as it advanced. In its centre the barometer fell to 28.30 inches or lower, with the result that one of the most disastrous storms of modern times swept across England. In Dublin the force of the wind was not great, but rain fell in torrents. On Thursday evening another equally deep depression arrived off the S.W. of Ireland, whence it passed off in a northerly direction. It was accompanied by strong gales and heavy rain in Ireland. Saturday was calm, damp, and foggy, and a most inclement week drew to a close with a slowly rising barometer. In Dublin the mean pressure was 29.201 inches, the barometer ranging between 29.930 inches at 9 a.m. of Sunday (wind S.S.W.) and 28.524 inches at 7.30 a.m. of Wednesday (wind N.N.W.). The mean temperature was 43.6° , the mean dry bulb temperature at 9 a.m. and 9 p.m. was 42.7° . The thermometer in the screen ranged between 35.9° on Saturday and 50.9° on Thursday. Rain fell on every day, the total measurement being 2.098 inches, of which 1.229 inches were registered on Tuesday.

Dull, showery, and unsettled weather prevailed at the beginning of the week ended Saturday, the 21st, except in parts of Scotland and in the north-west of Ireland, where the weather was fine and the sky clear. These conditions were brought about by the advance up the English

Channel of a complex atmospherical depression during the night of Saturday, the 14th, and in the course of Sunday, the 15th. Unfortunately, this state of things led to the complete obscuration by clouds of the total eclipse of the moon, which took place on the night of Sunday; in the Northwest of Ireland, however, the eclipse was seen in a clear sky. On and after Tuesday the lowest barometrical readings were again found in the Northwest, so that the wind became Southwesterly and temperature rose fast, with cloudy, showery weather. Gradients were not very steep, and so no gales were felt except at a few exposed coast stations. On Wednesday temperature rose to 57.8° in Dublin and to 57° in London and at Cambridge. On Friday the low pressure area passed on to Scandinavia, and the wind drew into N.W. or N. in the British Isles, with a reduction of temperature, which became still more decided on Saturday. In Dublin the mean height of the barometer was 29.720 inches—pressure ranging between 29.352 inches at 9 a.m. of Sunday (wind, N.W. to N.) and 29.951 inches at 9 p.m. of Saturday (wind, N.W.). The mean temperature was 44.5° ; the mean of the dry bulb readings at 9 a.m. and 9 p.m. was 44.1° . The thermometers in the screen rose to 57.8° on Wednesday (the highest reading recorded since October 13), and fell to 36.4° on Saturday. The rainfall was $.393$ inch on four days—of this quantity, $.211$ inch fell on Sunday, which was chiefly dull and wet on the east coast of Ireland.

During the week ended Saturday, the 28th, quiet, cold, but changeable weather held until Saturday, when a moderate southerly gale and heavy rain occurred in the morning. Over Western Europe in general the distribution of atmospherical pressure at first was for the most part irregular, and without steep gradients. As the amount of cloud was slight, temperature became and continued low, sharp night frosts being reported from most stations. On Wednesday a depression was found off the N.W. of Scotland, and cold showers of rain, sleet, and hail fell over Ireland, Wales, and parts of England and Scotland. The rainfall was not heavy except at Holyhead, where $.98$ inch fell in 48 hours ending 8 a.m. of Thursday. In the wake of the depression just mentioned several shallow secondary systems passed across the British Islands. On Friday afternoon the only serious depression of the week approached Ireland from the Atlantic. It caused heavy rain and a southerly gale on Saturday morning, but the wind soon veered towards W. with a clearing sky. In front of this disturbance a considerable, but transitory, rise of temperature took place. In Dublin the mean height of the barometer was 29.722 inches, pressure ranging between 29.920 inches at 9 a.m. of Sunday (wind, N.W.) and 29.249 inches at 9 a.m. of Saturday (wind, S.S.E.). The mean temperature was 38.7° . The mean dry bulb temperature at 9 a.m. and 9 p.m. was 37.7° . The thermometers in the screen rose to 51.8° on Saturday, having fallen to 31.4° on Tuesday. Rain fell on

three days to the total amount of ·359 inch—of this quantity ·280 inch was referred to Friday.

Sunday, the 29th, was a fair, bright, calm day. Monday, the 30th, was changeable.

The rainfall in Dublin during the eleven months ending November 30th has amounted to 24·521 inches on 163 days, compared with 15·378 inches on 141 days during the same period in 1887, 25·768 inches on 173 days in 1888, 25·718 inches on 178 days in 1889, 25·706 inches on 189 days in 1890, and a 25 years' average of 25·292 inches on 177·4 days.

At Knockdolian, Greystones, Co. Wicklow, the rainfall in November, 1891, was no less than 5·525 inches, distributed over 15 days. Of this quantity 2·330 inches fell on the 10th, and ·850 of an inch on the 15th.

From January 1st, 1891, up to November 30th, rain fell at Knockdolian, Greystones, on 155 days, and to the total amount of 30·269 inches.

PERISCOPE.

LEPROSY IN NEW SOUTH WALES.

FROM the *Australasian Medical Gazette* we learn that Mr. Sager, Secretary to the N. S. Wales Board of Health, has reported on leprosy in that colony. Twenty-five cases were under the control of the Board from 1883 to 30th April, 1891. Of these 16 were Chinese, 1 was a Javanese, 1 was a West Indian negro, and 7 were Europeans—*i.e.*, of European parentage, but born in New South Wales—all but one males. Two other cases were reported—one of German birth, immigrant, at the age of three, and one native-born, of European blood. In all the cases the disease was developed in the colony.

KEEPING DOWN THE DEATH-RATE.

THE New York correspondent of the *Journal of the American Medical Association*, in its issue of Aug. 22, states that an impression prevails in New York that the so-called "private" hospitals of the city are in the habit of improving their mortality statistics at the expense of Bellevue Hospital, which is maintained altogether with public money. An instance was reported in the lay press last spring. A negro was found moribund in the street in the immediate neighbourhood of a certain hospital, the ambulance of which picked him up, and carried him a mile and a half to Bellevue, to die there. The warden of Bellevue asserted that this was only one of many cases of inhumanity on the part of private hospitals for the purpose of keeping down their death-rates. "We are powerless," continued the warden, "because most of the hospitals are classed as

private, although they receive money from the city. These hospitals unload everything at Bellevue that looks like death, and the death-rate here makes it look like a slaughter-house. After dark, every night, there is a string of ambulances from all the hospitals in town passing through the gates of Bellevue, carrying dying patients. These have been treated at the hospitals until there was no chance left of curing the diseases from which they were suffering, and then the order was given to take them to the dead-house—meaning Bellevue. The doctors at the other hospitals laugh at us. Bellevue is a charity hospital belonging to the city, and we have to take all patients who are unable to pay their board.” It is fair, however, to add that a committee of the grand jury, reporting on the city ambulance service, denies the charge; such transfers being made, it maintains, only when they ought to be made.

BRITISH LARYNGOLOGICAL AND RHINOLOGICAL ASSOCIATION.

THE first meeting of the Session, 1891–92, was held at the rooms of the Medical Society, Chandos-street, London, on Friday, the 27th of November, when Mr. Lennox Browne, the newly-elected President, delivered an Address, taking for his subject “A quarter of a century’s Retrospect of Laryngology.” He first referred to the fact that the opportunities in the shape of special hospitals, and special departments at general hospitals for the treatment of diseases of the throat, as well as the number of patients applying for relief, had multiplied tenfold since the establishment of the Throat Hospital, Golden-square, in 1865, by Dr. Morell Mackenzie, and that that and other special institutions—now considered by some unnecessary—had been the direct means of teaching all those general surgeons of the Metropolis who are attached to special departments, or have since established other special hospitals, and that this is equally true of the provinces and colonies. He also claimed that all the best original work in this as in other specialties had come, not from the general surgeon who flirted with a specialty, but with the well-educated specialist who devoted his life to it. As both a warning and an encouragement, and not for the sake of amusement, the President recalled the ridicule and incredulity with which the laryngoscopic observations of Garcia were received, and the insolent assertions that a special hospital for diseases of the throat to be diagnosticated and treated by the aid of the laryngeal mirror was the acme of quackery. Not indeed that the Throat Hospital was more abused than was the now accepted Royal Ophthalmic Hospital of Moorfields, founded in 1805, which noble institution was described by the medical journal of those days as a “shop for the reception of gulls” and for the “cutting out of eyes,” and yet technically an Eye Hospital and a Throat Hospital were exactly on a similar basis of justification. And what had been said of laryngology twenty-five years ago was now being said of rhinology. To justify the position of this offshoot of the science,

Mr. Lennox Browne devoted his Address. He deduced striking statistics from the reports of the Throat Hospital in Golden-square, and the Central London Throat and Ear Hospital in Gray's Inn-road, which between them treated over 13,000 new patients yearly, to prove the statement of Bosworth, of New York, that the majority of diseases of the larynx, trachea, and bronchi, commence in the nose, which may well be termed "the front door" of the respiratory passages. Careful statistics taken at the Central London Throat and Ear Hospital had proved that "spurs" and deviations of the septum, if not the cause—as Bosworth asserted—of hypertrophic rhinitis, and of many other intranasal causes of obstruction, are, at least, associated in no less than 87 per cent. of the cases that come under notice. The President also alluded at some length to the far-extending ill effects of mouth-breathing due to adenoids, as instanced by impairment of hearing, sight, respiration, and speech, and of the general mental development of the young. Amongst other comparatively unrecognised consequences of this condition were laryngismus stridulus and laryngeal growths in young children, cases illustrative of which he had himself had the honour to be the first to report at that Association. Passing onwards, the lecturer referred to the enormous advantage in the detection and treatment of tuberculosis generally, as learnt through the lessons of the laryngoscope; to the value of the microscope in its more perfect development of recent times, which he attributed to the powerful exhortation of Sir James Paget "to examine each morbid growth or product directly after its removal from the living body, while it may be deemed still alive;" to bacteriology, the younger sister of histology; and, lastly, to the high importance of searching for constitutional bases for all special and apparently local maladies, and for correction by education of disorders of the voice through the intelligent application of physiology. The President concluded his Address by quoting an eloquent peroration of Sir James Paget, to the effect that we must not be content with present utility, for that our utility can be increased only by every increase of our real knowledge.

AN ANTHRAX REMEDY.

R. CHLORAL HYD., \bar{z} i; glycerini; aquæ, āā \bar{z} ivss; ft. sol. Gauze soaked in this solution is laid on the anthrax. This treatment is said to render the use of the knife unnecessary.—*The Therapist*, No. 7.

ARTICHOKE.

M. LE DR. PATHIER draws the attention of the medical profession, cattle breeders and agriculturists, to the fact that the milk of cows who eat artichoke leaves causes vomiting and purging. According to the author, infants are especially liable to be affected injuriously with such milk.—*Les Nouveaux Remèdes*, Nov. 13, 1891.

HOW ARE THE MIGHTY FALLEN !

IN Munich, owing to the many deaths directly traceable to Koch's consumption "cure," its sale is absolutely prohibited. Druggists are forbidden to sell it even to medical men. [We wonder what use the stock on hand is being applied to, or has the high-priced nostrum departed by the closet sewage-pipe from the cabinets of its admirers.]

CLEVER FALSIFICATIONS.

OUR contemporary, *Répertoire de Pharmacie*, reports that old almonds and old nuts are by dishonest traders submitted to the action of sulphurous acid vapours, which remove their blackish-brown colour and give them the well-known light-brown appearance so long considered indicative of freshness.

STRYCHNIN AS AN ANTIDOTE TO OPIUM.

M. C. T. DERCUM reports (*Pharm. Zeitung*) the recovery of a patient who had taken 30 grammes of the extract of opium, by hypodermic injections of 0.00375 of a gramme dose of strychnin every hour for seven doses. Prior to using the strychnin, all the usual antidotes and restorative methods were unsuccessfully tried.—*Répertoire de Pharmacie*, No. 8, 1891.

A NOVELIST'S ANATOMY.

THAT brilliant writer, Rudyard Kipling, describes one of his heroes as being permanently blinded by a sabre cut on the forehead, which *injured the optic nerve*.

QUININE SYNTHESIS.

AMONGST the most brilliant of the recent triumphs of chemistry is the synthesis of quinine by MM. Grimaux and Arnaud. They operated on "cuprein," and by a series of well-known substitutions they produce a "methyl-cuprein" which they find to be chemically identical with quinine, and it is to possess the same physiological properties.—*Les Nouveaux Remèdes*, No. 9.

ELECTRICAL TREATMENT OF UTERINE TUMOURS.

DR. G. BETTON MASSEY, of Philadelphia, read a paper before the American Medical Association, at the last annual meeting, in which he gives the result of Apostoli's treatment in 46 consecutive cases of his own. He excludes from tabulation severe cases; two because the tumours were polypoid, and five because they were under treatment for too short a time. Of the remaining 39, 12.8 per cent. resulted in complete cure and disappearance of the tumour; 79.4 per cent. in symptomatic cure with or without reduction in size; 5.3 per cent. [two] were unaffected;

and 2·5 per cent. [one] were made worse. In other words, about 92 per cent. were successes and 8 per cent. failures. The case which was made worse by the treatment died subsequently from septicæmia during attempts to remove the tumour piecemeal; and the anterior wall of the uterus was found to be ruptured. It was a case of large intra-uterine fibro-cyst, treated before it had been pointed out by Apostoli that such cases would be injured by electrical treatment.

MICROCIDINE.

UNDER this name M. le Dr. Berlioz introduces to the Academy of Medicine of Paris a new antiseptic substance produced by fusing β naphthol and caustic soda. It is cheap, non-toxic, more powerful than phenol, soluble in three times its weight in water, and when well diluted forms a colourless solution.—*Les Nouveaux Remèdes*, No. 9.

SALOL.

IN typhoid fever the best results have been obtained by the administration of three-grain doses of salol every two hours. Tympanites disappears, and diarrhœa, no matter how severe at the commencement, gradually improved; no further special treatment. Temperature seldom rose after the first day of salol administration, and after the first week it fell steadily. The average duration of cases treated in this way was 17 days.—*The Therapist*, No. 7.

MASSAGE.

DR. AGOSTINI (*Archivio di Ortopedio*) reports 417 cases of accident from massage during the past year. They include 41 tibio-tarsal, 12 endio-carpal, 6 elbow, and 3 knee dislocations.—*The Dietetic Gazette*, July, 1891.

LYSOL.

ONE of the many new antiseptics is stated by Gerlich to be superior to all others. 1. It is an energetic germicide; 2. It is almost odourless; 3. It is soluble in all proportions in water; 4. It is non-poisonous. He gives the following prescription:—Lysol, 2·5 grammes; water, 50 grammes; alcohol, 25 grammes; glycerine, 25 grammes—as a gargle for foul breath or diseased conditions of the mouth and throat.—*Les Nouveaux Remèdes*, No. 14.

RESORCIN.

H. MENCHE (*Cntribl. f. klin. med.* No. 21) strongly recommends teaspoonful doses of a solution of resorcin varying from 1 to 5 per cent. He declares that it is indicated in all cases of gastritis, dyspepsia, acute and chronic

cancer, the vomiting of pregnancy, and in sea-sickness. It is, however, contra-indicated in cases of gastric ulcer. The following are his formulæ:—Hydrochloric acid, 2 grammes; resorcin bisublim., 2 grammes; syrup of oranges, 20 grammes; water, 178 grammes. A large spoonful every two hours. Condurango decoction, 180 grammes; rhubarb tincture, 5 grammes; resorcin bisublimite, 2 grammes; syrup of oranges, 20 grammes. 3ss. every two hours.—*Les Nouveaux Remèdes*, No. 16.

BORIC ACID.

DR. KEEGAN (*Provincial Medical Journal*) recommends boric acid in cases of typhoid fever with marked tympany. With doses of eight grains, frequently repeated during the day, he obtained good results in fifty-two cases.

BITES OF POISONOUS SERPENTS.

M. LE ST. KARLINSKI, from a large experience of the bites of poisonous snakes in Bosnia, declares that a 1 per cent. solution of chromic acid injected hypodermically successfully acts as an antidote.—*Le Mercredi Médical*, No. 31.

ATROPIN AS A HÆMOSTATIC.

DR. BIERWIERTH (*Le Mercredi Médical*, No. 31) reports the successful treatment of almost all forms of bleeding by the hypodermic injection of small doses of atropin. He considers it to be superior to all other remedies as a hæmostatic and suitable for all class of cases.

SPONTANEOUS DORSAL LUXATION OF THE HIP FROM GONORRŒA.

M. KAREWSKI, at a meeting of the Surgical Society of Berlin, on the 13th of July, exhibited a case of spontaneous luxation of the femur on the dorsum ilii due to gonorrhœal synovitis. The patient was a married woman of forty-one years of age.—*Le Mercredi Médical*, No. 31.

CACTUS GRANDIFLORUS.

DR. JOHN AULD warmly recommends cactus grandiflorus as a cardiac tonic superior to digitalis and free from its cumulative dangers. He considers it suitable both in cases of venous irritability and organic lesions of the heart. The preparations he uses are the tincture and the fluid extract, which may be given in doses of from five to fifteen minims thrice daily. The following are his formulæ:—Liq. cacti grand., 10 grammes; tinct. of nux vomica, 10 grammes; liquor pancreatici, 100 grammes. Mix. A teaspoonful after each of the two principal meals. Liq. cactus grand., 10 grammes; liq. arsenicalis (Fowler), 30 drops; tincture of gentian, 100 grammes. Mix. One teaspoonful in water every four hours.—*Les Nouveaux Remèdes*, No. 5.

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

Granular Effervescent Preparations.

Mr. Alfred Bishop, the well-known manufacturing chemist, of 17 Speck's Fields, Mile End New Town, London, has recently introduced to the notice of the profession a very elegant series of granular effervescent preparations, which cannot fail to supply a want in practical therapeutics.

Five of these preparations have been submitted to our notice. One contains 5 grains of phenacetin in each drachm; another 5 grains of antifebrin (acetanilide); a third, 2 grains of exalgin; and a fourth, 5 grains of antipyrin (phenazone) with one grain of caffeine.

The fifth is quite novel to us. It is the granular effervescent carbonate of iron, prepared according to Blaud's formula, 2 grains of the salt being present in each drachm. This last cannot but prove a very popular and pleasant way of giving a ferrous salt in effervescence.

Glycerine Jujubes.

Mr. Stephen Wand, of Leicester, has sent us a box of glycerine jujubes, which seem to be decidedly superior to any as yet in the market. They are made of glycerine and gelatin, and are warranted to contain 50 per cent of pure glycerine. They are therefore palatable and most emollient and sedative. At this verdict we have arrived from practical experience.

Soluble Pearl-coated Pills.

Mr. Wand, of Leicester, has also forwarded a box of samples of soluble pearl-coated pills, selected at random from a list of nearly 1,300 formulæ. The pills are well made and enveloped in a pearl-coating, which on experiment is found to crack and expose its contents on immersion for half an hour in water at blood heat. The disintegration is hastened by the addition of a small quantity of dilute hydrochloric acid.

These experiments would go to show that the pills are likely to break up and become dissolved in the stomach, and that too without any long delay. The pills are tastily dispensed in bottles with cork-stoppers tipped with polished wood.

Dermatol.

Messrs. Burroughs, Wellcome & Co. have sent us a specimen of dermatol, which is put forward as a substitute for iodoform by the firm of Meister, Lucius & Brünig, in Germany. Chemically it is said to be

a basic gallate of bismuth, and the choice of name does not seem a very appropriate one. It is an odourless, light yellow powder, stable towards air and light, and insoluble in the ordinary solvents.

Dr. Glaeser, of Breslau, reports favourably of it as an application to superficial wounds. It is also used in various skin affections, diluted with an inert powder such as starch or talc, or as an ointment (10 per cent.) with vaselin or lanolin. On account of its insolubility its antibacterial action is limited to the part where it comes into direct contact with the pus microbes, resembling in this respect iodoform. In addition to its direct antiseptic action it is claimed for dermatol that it has a desiccating influence, so that the development of the bacteria is inhibited by the drying up of their pabulum. The astringent action of the preparation is also said to influence the process of healing, whilst on the other hand it causes no irritation and is not absorbed. This preparation is further said to be valuable when administered internally in affections of the stomach and intestines, and it is stated that, as it is non-poisonous, doses amounting to 2 grams daily are well borne.

The Combined Spatula, Pen, and Pencil.

Messrs. Burroughs, Wellcome & Co. have sent us some specimens of an invention designed for the special use of medical men who so often require to have at hand a pencil, a pen, and a spatula.

The spatula is made of white metal, nickel-plated, and can therefore be used as a tongue-depressor, fruit-knife, or paper-knife.

The firm supply this ingenious combination at the very low price of sixpence each, post free.

On the blade and handle some of the preparations for which the firm are famous are cleverly advertised.

Benzosol (i.e., benzoyl-guaiacol).

This substance is a granular white powder, with a faint odour, and a somewhat aromatic taste. The drug has been employed with success in the In-patient department of the Mariahilf Hospital, Aix-la-Chapelle, by Dr. Schervier. The Benzosol was tried in 10 cases of incipient phthisis, and decided improvement took place in each case. Benzosol is regarded as an agreeable and harmless substitute for creasote, beneficially influencing the general nutrition, and consequently increasing the resistance of the patient to the disease. Benzosol is decomposed in the digestive tract into guaiacol and benzoic acid, and the former can be detected in the urine and saliva within half an hour after ingestion. The drug is not soluble in water and is decomposed by hot water, so that it must be given in powder. Messrs. Burroughs, Wellcome & Co. are the agents.

Iodopyrin.

This product is a chemical compound of iodine with antipyrin, in which an atom of hydrogen is replaced by iodine, thus $C_{11}H_{11}IN_2O$. It is only slightly soluble in cold water and alcohol, but readily soluble in hot. It is perfectly tasteless and without odour. This product has been tested in the clinic of Professor R. R. v. Jaksch, and is reported upon by Dr. Egmont Munzer in the pages of the "Prager med. Wochenschrift," 1891, No. 4 and 5. The product was first prepared by Dittmar (*vide* "Berichte der chemische Ges. zu Berlin," 11, 1885).

Dr. Munzer says:—"I have studied the action of this substance principally on two types of fever—(1) on typhus abdominalis, and (2) on pulmonary tuberculosis. Five cases of typhus are recorded, and in each instance the temperature was rapidly lowered to normal. In the cases of tuberculosis pulmonum the administration of the drug caused profuse sweating, and in every way the antipyretic action was all that could be desired." When iodopyrin is taken into the stomach it is decomposed into iodine and antipyrin.

A YOUNG ANATOMIST.

WHEN he was but fifteen years of age Albinus was considered by Boerhaave one of the ablest anatomists in Europe; and at twelve years of age Littre was demonstrating anatomy; but what must be said of Master Albert Finch, of Rockport, Indiana, who, though but five years old, is an anatomist.

DENTITION.

THE fever of dentition is relieved by hot or cold bathing, or by drop doses of aconite, which will probably tide over the period of irritation which comes with dentition, and will prevent convulsions. If convulsions are imminent, give small doses of bromides. Hollopeter.—*The Times and Register*, No. 672.

ERRATUM.

Vol. XCII., No. 240, Third Series, page 501.—Top line, for "phytogenous," read "hyphogenous."

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PART I.

ORIGINAL COMMUNICATIONS.

ART. IV.—*Nephro-Lithotomy*.^a By T. MYLES, M.D.; Fellow, Member of Council and Professor of Pathology, Royal College of Surgeons; Surgeon to the Richmond Hospital; Member of Council, Section of Surgery, Royal Academy of Medicine in Ireland.

ALTHOUGH the operation for the removal of stone in the kidney has now been performed fairly frequently, nevertheless, as the subject is one of extreme interest and importance, I trust I may be forgiven for bringing before you a short notice of a successful case that occurred in my practice, not with the hope of being able to add anything to your general fund of information, but rather with the anticipation that the discussion—which I trust will follow the paper—may enable us to obtain the opinions and practice of men whose experience in this branch of surgery is greater than mine.

My case is that of a young man, who was brought to me by my friend, Mr. Louis A. Byrne, now Surgeon to Jervis-street Hospital, and whose history and symptoms suggested the possibility of his having a stone in the kidney. The symptoms were by no means clear or typical. He complained of dull, aching pain in the left loin, not very severe and not paroxysmal; the pain was increased by effort, or coughing, and with this he had intense tenderness on pressure. He had no attacks of renal colic, nor any

^a Read before the Section of Surgery in the Royal Academy of Medicine in Ireland, on Friday, December 11, 1891. [For the discussion on this paper, see page 66.]

increased frequency of micturition, nor had he ever passed any calculous fragments with his urine. His urine was practically normal, acid in reaction, contained neither pus nor blood, and was normal in specific gravity and quantity. The young man himself—twenty years of age—looked in perfect health, having a good complexion, and being free from any emaciation or cachexia.

I had him admitted to Jervis-street Hospital, to which institution I had then the honour to belong, and he was seen several times by my colleagues in consultation.

As the symptoms were not conclusive, nor his distress urgent, I tried the usual palliative treatment for some time—hot baths, alkaline diuretics, opium occasionally, and hot stupes over loin.

His condition was not in any way ameliorated by this treatment, and he still complained of the same dull pain that he had previously suffered from. One day the sister in charge of the ward told me that she thought the lad suffered much more pain than he acknowledged, as she noticed him frequently when sitting at his meals clutch violently at the edge of the table, hold his breath, and look deadly pale and sick, as if suffering great agony.

On pressing him more closely he confessed that, during the last few days he had suffered from these attacks, but he had not mentioned them, as he thought it might be the medicine he was getting that was expelling the stone, and that his sufferings were therefore merely the prelude to his complete recovery.

The diagnosis being now more satisfactorily established, I at once suggested an operation, to which he willingly consented.

I need not describe the now familiar details of lumbar nephrotomy, but will merely state that after the usual incision had been made parallel to the lower border of the last rib, and one inch below it, and the perinephric fat exposed, on pushing my finger into the wound and passing over the anterior surface of the kidney, which was apparently perfectly normal, I felt a large, hard, tightly-fixed lump, which at first, from its position, I believed to be a bony tumour growing from the front and sides of the spinal column. On more careful manipulation, however, I soon had the gratification of feeling that it was continuous with the kidney, and was in reality a large calculus imbedded in the pelvis of the ureter, which it had carried somewhat inwards, and sending short processes outwards into the hilum of the kidney.

The difficulty now was how to remove it. On the one hand, it was obviously too large to be removed by cutting through the

kidney periphery, and any attempt to remove it by cutting on the face of the pelvis was bound to give rise to dangerous hæmorrhage from the distended renal veins, which could be seen stretched right in front of the stone.

Acting on the suggestion of one of my colleagues, I determined to attack it from behind, and with that object proceeded to gently raise the kidney off the quadratus lumborum muscle, and draw it forwards in the wound, so as to leave room for my fingers to touch its posterior and inner surface. I could now feel the calculus very clearly, and ascertained that at one part the investing pelvis was extremely thin. Through that thinned portion I now scratched cautiously with a director, and made a comparatively small opening; a little gentle fingering now enabled me to revolve the stone upon its axis, and coax it out of the kidney. Through the wound in the pelvis I now explored the rest of the kidney thoroughly for another stone, but did not find any.

The wound was now well douched, all bleeding vessels clamped and ligatured, and the edges brought together with stout silk sutures; a large drainage tube was passed as far as the kidney, and fixed by a suture to the skin.

I will not weary you with a dry detail of his subsequent progress from day to day, but will merely state that, with one exception, the boy made an uninterrupted recovery, and I had the honour to show him last year at a meeting of the Surgical Section, perfectly well and able to follow his usual avocation.

The exception to which I referred was the fact that for four days after the operation he had profuse hæmaturia—so much so, indeed, as at one time to cause me considerable anxiety. He was put on 10 minim doses of hazeline, which acted like a charm in arresting the bleeding; from that on his recovery was rapid.

This case of itself is not of any special interest, except from the fact that the symptoms were obscure at first, and that the stone was very large, weighing 282 grains! being, I think, the largest ever removed unbroken by any surgeon in Ireland, and, as anyone can see who examines it, it is almost a perfect mould of the pelvis and infundibula.

Although there is nothing very startling in the case, nevertheless I bring it forward in the hope that it may act as text upon which more skilful preachers may lay down the law, and some clear and definite decision may be arrived at upon some of the many interesting and as yet doubtful details of the operation.

1st. Having diagnosed the existence of a stone in the kidney, how should it be removed?—by the simple lumbar incision, or by the combined method of Thornton?

This latter method, which has been so strongly advocated by its originator, consists in opening the abdomen in the linea semilunaris, placing the hand in the cavity, and feeling the kidney for the stone, and having found it, the kidney is steadied with the hand in the abdomen, while the surgeon, turning the patient slightly on his side, cuts boldly down to the kidney from the loin by a short incision; the stone is then cut out and removed by the lumbar wound.

This seems at first rather a startling addition to lumbar nephrotomy, inasmuch as it superadds an abdominal exploration to the main operation; nevertheless, its author asserts that it has undoubted advantages, which he briefly specifies as follows:—

1st. Certainty that the patient has two kidneys.

2nd. There is less danger of overlooking the stone.

3rd. There is no danger of cutting into the wrong kidney—an accident of not uncommon occurrence.

4th. There is no danger of wounding either the colon or the peritoneum.

5th. As the wound is small there is no danger of a loin hernia, and less danger of urinary extravasation or fouling of the wound.

6th. The condition of the ureter and of the other kidney can be ascertained.

7th. The kidney can be thoroughly steadied during the subsequent steps.

On the other hand, Mr. Thornton says the only objection to the method is the addition of another wound, which, he says, is of very little importance in the hands of a cleanly surgeon.

Although considerable difference of opinion may exist as to the value of some of these so-called advantages, there can be no doubt whatever but that two of them are of great importance—namely, the assurance that you are cutting on the pathological kidney and not on the healthy one, and the benefit to be derived from having the kidney thoroughly fixed.

It may seem absurd at first sight to contemplate the possibility of cutting into the wrong kidney, but every practical man knows well that it may occur to the most careful surgeon, as it has occurred already to some of the most distinguished.

A patient with a stone in the kidney may refer the pain to the

healthy side, and complain of no pain in the diseased side; or more frequently he complains of pain in both sides, and it becomes a matter of the most extreme difficulty to make sure whether there is not a stone in both kidneys, or if in one only, in which one?

In such a case Mr. Thornton says the abdominal section converts doubt into certainty, and by rendering a possible second operation unnecessary, adds greatly to the chance of a safe issue from the patient's danger. Now is this true? If it be absolutely true, I think no one would question the propriety of the method in all cases where there was any reasonable doubt as to the exact seat of the stone. But is it really absolutely true that an abdominal section enables a surgeon to discover the presence of a stone in the kidney?

I would, with great deference to such distinguished authority, venture to suggest that even the most careful and accomplished surgeon may fail to recognise a stone in the kidney by exploration with the hand in the abdomen, and I would go even further, and point out that it has occurred that, even after a kidney has been removed and laid on the table, the most careful palpation has failed to discover a stone actually in the organ.

If this be possible, even with a removed kidney, how much more probable does such a failure become when we endeavour to explore the kidney covered in front by colon and tightly stretched peritoneum, and with its hinder border and inner surface entirely out of our reach. Through such an abdominal wound no surgeon would venture to needle the kidney, and yet how often has the needle disclosed a stone unrecognised by the most careful palpation. Again, if the kidney is seriously diseased, and if its sinus is dilated by abscess formation, its coverings thickened by an inflammatory process, and the viscera matted together in front of it by localised peritonitis, how easily may a stone escape detection by palpation through an abdominal wound.

Further, we are all aware that small stones usually lie concealed in the calyces of the ureter deep in the kidney sinus, and that detection of such stones is frequently possible only by sounding through an incision in the lower border of the pelvis, or through the kidney substance. How can we use this important aid through an abdominal incision?

I think I have said enough at least to show that Mr. Thornton's method, so far as its being an aid to certainty of diagnosis is concerned, is not altogether unassailable.

The other asserted advantage which I have, merely for purposes of convenience, placed second to the question of diagnosis is the claim that the kidney can be fixed by the hand in the abdomen, and the necessary manipulations for the removal of the stone thereby more rapidly and successfully performed.

No one, I think, will question the statement that the great difficulty in lumbar operations arises from the fact that the kidney has an unhappy tendency to glide away from the fingers when the patient is lying on the opposite side, and this combined with the occasionally very narrow ilio-costal space renders manipulation through the wound difficult and tedious. Anything, therefore, which steadies the kidney must be beneficial, and the only point at issue really is, can this steadiness be obtained in no other way except by a *sectio-abdominis*?

I think it can, and the alternative method is that mentioned by Mr. Thornton himself, of placing the patient almost flat on his back, with the wounded side overhanging a pretty high table, while an assistant applies to the front and opposite side of the abdominal wall steady and continuous pressure. By such a method the kidney can be fixed, and when we remember that in any case the stone must be removed by the loin incision, the adoption of such a method, if proved feasible, would render the abdominal wound unnecessary. Further, the so-called fixing of the kidney by pressure from within is not free from danger, it can only be obtained by traction on the fragile renal vein, and I need hardly delay to point out the possible catastrophe that might result from such traction.

I have spent some time in considering these two reputed advantages of Mr. Thornton's method, because they are, to my mind, the only ones of real importance; the others are hardly worthy of notice.

His claim that his method prevents a patient with only one kidney being operated on, is simply puerile. It may prevent him from having his kidney cut open, but it does not hinder the abdominal section, and simple as that operation is, a patient with only one kidney runs a poor chance of surviving it. Again, I venture to state that the combined experience of this Academy would fail to register more than half a dozen cases out of the thousands of bodies examined in the dissecting and *post-mortem* rooms, in which only one kidney was found. So also the dangers of subsequent lumbar hernia, and of wound of the colon in the loin operation, are greatly exaggerated.

I think I am justified, therefore, in stating that I have shown that the claims which Mr. Thornton makes for his combined operation are based upon arguments that are at least open to question, and that the added dangers of the extra incision more than compensate for any possible advantages it may possess.

Before concluding, I would like to obtain the opinion of the Section on some details of the lumbar operation:—

1st. Is Mr. Jordan Lloyd's method of sounding each calyx by a Child's sound inserted through the pelvis of the ureter feasible? At the very least I should say it must be extremely difficult in all cases where the ilio-costal space is narrow, as owing to the depth of the kidney the movements of the sound must necessarily be very limited, and even its mere introduction cannot be easy.

2nd. The stone having been found, how should it be removed? By section through the kidney substance, or by cutting into the ureter? Against the former is the danger of hæmorrhage and additional shock; against the latter the possibility of a permanent fistula.

I think a great deal of confusion has arisen in connection with this particular matter, by the very loose and unscientific way in which anatomical names are used. For instance, one writer says—"I cut into the pelvis of the kidney from the front." Now he could not do this, because the kidney has no pelvis, and if his statement means that he cut into the pelvis of the ureter from the front, I say that no surgeon in his sober senses would do it when he remembered that the renal veins and artery completely conceal nine-tenths of the pelvis, and that any attempt to do it would be simply the recklessness of anatomical ignorance.

What then do such statements mean? The answer is simply—nothing; the operator cut something, and, let us hope, found the calculus, but what he cut we do not know, and probably never shall. I may add, that even such an accomplished surgeon and anatomist as Mr. Treves is guilty of this unpardonable mistake, as in his recently published work on operative surgery, having first carefully described the relations of the pelvis, calyces, &c., he subsequently lapses into the error of speaking one moment of the pelvis of the ureter and in the next of the pelvis of the kidney. Such a lack of scientific accuracy can lead to nothing but confusion, no one knows what is meant, and the value of all descriptions of such operations is simply *nil*.

I will now conclude by thanking you and the members of the

Section for the kind attention you have given, and as the object of my paper was to obtain information rather than to give it, I trust that the more experienced nephrotomists will give us their opinions on what I venture to call points of importance in connection with nephro-lithotomy.

ART. V.—*Some Recent Aids to the Diagnosis and Treatment of Diseases of the Stomach.*^a By H. C. TWEEDY, M.D. Dubl., F.R.C.P.I.; Physician to Steevens' Hospital.

AT the commencement of last year's Session this Academy had the privilege of hearing from Professor Purser a dissertation on "The Modern Diagnosis of Diseases of the Stomach," which will long be remembered by all of us who were present on that occasion.

The absolute clearness with which this complex subject was treated, and the closeness of reasoning displayed, following each point to its logical conclusion, were sufficient to account for the lasting impression left upon our minds, while the labour and research evidenced in every page render the lecture, now fortunately preserved for us in the Transactions of the Academy, a perfect storehouse of information for all who may wish to refer to the extensive literature of Diseases of the stomach.

Dr. Purser dwelt chiefly on the modifications the digestive process, as carried on in the stomach, undergoes in disease. In this paper I shall endeavour to lay before you very briefly some mechanical aids now at our disposal for the physical examination of the organ itself, for obtaining portions of its contents for chemical analysis, and for the treatment of some of its most common diseases.

I shall submit to your consideration two methods of physical examination which, as far as I am aware, are not employed here as frequently as they should be. Also two recent appliances—one for obtaining small quantities of stomach-contents for diagnostic purposes, and the other for applying electricity directly to the stomach.

The first mode of physical examination to which I would draw your attention is what has been termed the "Splashing Sound," or "Clapotement"—a method of examination much lauded by Riegel,

^a Read before the Section of Medicine in the Royal Academy of Medicine in Ireland, on Friday, December 18, 1891. [For the discussion on this paper, see page 68.]

Obraztsoff, Boas,^a and others who state that they find it gives better results than percussion.

This sound may be elicited by pressing repeatedly with the tops of the fingers in the epigastric region. Its lower limit rarely extends below the level of the umbilicus, unless the stomach be dilated, or else displaced downwards. It may be heard in healthy persons more or less plainly if they have taken a large quantity of fluid, or if the abdominal walls are relaxed, and not overloaded with fat.

This method has a double utility. In the first place, we may be able to ascertain by it the size and position of the stomach. If, for instance, we palpate very gently from below upward till splashing is perceptible, then we may in many cases be able to arrive at a fairly accurate conclusion as to the contour of the stomach; and not only so, but we may also get an idea as to the condition of its muscular layer, for let a healthy person drink 50 or 100 grammes of water we can detect no splashing, even when the abdominal walls are thin; on the other hand, if the muscular layer of the stomach be wanting in tone (although there may be no dilatation or retention of the food taken), the sound may be produced very distinctly by the above-mentioned quantity of water, or even by a smaller quantity.

Under some circumstances splashing may originate in the transverse colon; but in this case the splashing is found along a straight line, or along a curve which is slightly convex *above*, and may thus be distinguished from that originating in the stomach by the fact that the latter forms a convex line *below*, and ascends distinctly from the median line. Should these differences not be distinctly marked, we may inflate the stomach by means of a tube and double-rubber bulb. After insufflation of air the splashing sound in the stomach ceases, while that in the colon persists; but as soon as the air is allowed to escape from the stomach the splashing sound immediately reappears.

This artificial distension of the stomach by gas or air has been much employed on the Continent as an aid to diagnosis, with the object of enabling us to map out the contour of the organ, especially the greater curvature in a more accurate manner. It was originally introduced by Frerichs and Mannkopf, who carried out the process by generating CO₂ by the separate introduction of solution of tartaric acid and bicarbonate of sodium. Boas and others

^a Allgemeine Diagnostik und Therapie der Magenkrankheiten. Leipzig. 1890.

accomplish the same object, gradually inflating the stomach by means of the double-rubber bulb, attached to an ordinary stomach tube. This method, which was first employed by Runeberg, possesses striking advantages over insufflation by CO_2 .

In the first place the quantity of air employed can be accurately gauged and controlled, so as to increase or diminish it according to circumstances. Moreover, the estimation of the amount of air employed is of itself useful for diagnostic purposes, as a relaxed and dilated stomach requires much larger quantities of air than a healthy stomach with normal muscular tone. The outlines of the stomach are also brought into greater prominence, so that the portion of it lying against the abdominal wall can, as a rule, be palpated thoroughly and without undue haste, whereas in the carbonic acid method this can only be done while the development of the gas is taking place; for as soon as this process is completed the CO_2 escapes rapidly from above or below, and the stomach again contracts before a thorough examination can be made.

During artificial distension of the stomach with CO_2 or air, it sometimes happens that the stomach itself does not become enlarged, but that the outlines of the intestines become unduly prominent. This condition was first observed by Ebstein, and described as insufficiency of the pylorus. Boas and Ewald have demonstrated, however, that these cases are accompanied by an abnormally rapid fæcal evacuation, and both writers are of opinion that, aside from insufficiency of the pylorus, there is in such cases an accelerated discharge into the intestines of alimentary substances undigested in the stomach.

Numerous methods have been suggested with the object of demonstrating the size, position, and capacity of the stomach; notably those of Schreiber, Rosenbach, Fleischer, Jaworski, and others, all of which may be found fully described in Boas's recent work. Also the attempts at electric illumination of the stomach by gastrodiaaphany, as lately proposed by Dr. Einhorn, by means of a Nélaton's tube, provided with an Edison's incandescent lamp, on the plan of Voltolini's method of illuminating the larynx.

These methods, however curious and interesting, are practically useless now that we possess in insufflation a procedure which is both certain and devoid of danger when practised under proper precautions. Boas lays down the following contra-indications to the use of air or CO_2 , as well as to the introduction of the sound:—(a.) Constitutional or local diseases in which the irrita-

tion connected with use of the sound, or insufflation, may enhance the disease or threaten the patient's life; (b.) Gastric and intestinal diseases, which can be diagnosed without resort to the sound, &c.—especially gastric ulcer and adhesions of the stomach-walls, and also suspected atrophy of the gastric mucous membrane.

There is one purpose for which up till very recently the use of the stomach-tube has been regarded as indispensable—viz., the obtaining of portions of the contents of the stomach for chemical analysis by Ewald's^a "expression method." There are sometimes, however, difficulties in this mode of examination which, all important as it undoubtedly is, render both doctor and patient too ready to dispense with it, often to their mutual injury.

Several contrivances have been suggested as alternatives for the use of the tube. Edinger and Späth^b suggested that the patient should be made to swallow particles of elder-pith, stained with appropriate re-agents, or leaden balls, to which are attached threads stained with the test re-agent.

Edinger^c also suggested the plan of causing the patient to swallow a small sponge attached to a thread. The sponge was allowed to remain in the stomach for several minutes, and then withdrawn, after which the contents were pressed out and examined for HCl. This test, however, fails in two particulars—first, the sponge is partly expressed during its withdrawal through the œsophagus, and thus loses much of its contents; secondly, it absorbs fluid from the moisture of the œsophagus and pharynx—thus, the stomach-contents cannot be examined pure.



With a view to obviating these disadvantages, Dr. Einhorn,^d of New York, has devised an ingenious little instrument, which he terms a "stomach-bucket," and of which I have the pleasure of exhibiting to you this drawing. This consists of a small oval

^a Ewald and Boas. *Virchow's Archiv.* CL, 325, 1886, and CIV., 271, 1888.

^b *Münich. med. Wochenschrift.* XXXIV., 51. 1887.

^c Edinger. *Deutsche Archiv. f. klin. med.* Bd. 29, p. 555.

^d *N. Y. Med. Rec.* July 19. 1890.

vessel— $1\frac{3}{4}$ cm. in length, $\frac{3}{4}$ cm. in breadth—made of silver; the upper portion is open, but bridged over by an arch of the same metal, to which is attached a silk thread.

Dr. Einhorn gives the following directions for the use of this apparatus:—

“The patient is asked to open his mouth widely, and the little vessel is placed on the root of the tongue (almost in the pharynx), after which the patient is to swallow *once*. The vessel reaches the stomach in a short time (one-half minute to one and a half minutes). This point can be easily found by the length of the thread from the vessel to the mouth; it equals the distance from the teeth to the cardia, which is usually 40 cm. It is advisable to make a knot on the thread, marking 40 cm. When this knot comes into the mouth, then we are sure the vessel is in the stomach. The vessel having been left in the stomach for about five minutes, is then withdrawn. During withdrawal of the apparatus, a resistance is felt at the introitus œsophagi. To overcome this difficulty, when the apparatus is at that narrow point the patient should either deeply expire or swallow once. By the act of swallowing, the larynx is pushed upward and forward, and thus the passage is free.

“If the stomach is not empty the vessel returns filled, and the amount is sufficient for making qualitative tests for free hydrochloric acid and the rennet ferment.”

“In people suffering from an abundant secretion from the mucous membrane it may happen that the bucket may become filled with mucous before entering the stomach. (In emptying the vessel it is always easy to distinguish real stomach-contents from plain mucus.) In case we find principally mucus in the vessel, it is necessary to make the trial again, and to cover the opening with a thin gelatinous capsule, which keeps the mucus away from the vessels on its passage to the stomach; there the capsule is dissolved, and the stomach-contents can enter unmixed into the apparatus. On its return from the stomach, the ‘bucket’ being filled, the mucus cannot to any extent enter into it.”

“If the sample from the ‘stomach-bucket’ give a positive reaction of HCl (with Congo, or Günzburg’s phloroglucin-vanillin test^a) then the same is made use of at once; but should it prove negative as to the presence of HCl the obtained sample must be examined more minutely, and if it is found to be mixed with much mucus,

^a Cttb. für klin. Med. 1887. P. 737.

then it is necessary to obtain another sample with capsule covering as described above."

The best time for making an examination is just as usual—one hour after Ewald's "trial breakfast,"^a or three to four hours after a trial dinner.

It goes without saying that for a full and exact analysis of the contents of the stomach the use of the tube is indispensable, but Dr. Einhorn claims certain advantages for his apparatus, which I can fully endorse:—

1st. It is more simple and easy to use than the tube, and causes no exertion to the patient.

2nd. It is a great advantage to the general practitioner, who does not intend to make an exact analysis of the stomach-contents, to be able in this rapid manner to determine whether there exist free HCl or not.

3rd. Even in gastric ulcer there is no danger whatever from a hæmorrhage in consequence of the examination, for which reason this method may safely be employed in cases where there is a suspicion of an ulcer of the stomach, and where there may be danger in using a tube.

4th. The introduction of the bucket may elicit information regarding several other points connected with the œsophagus and stomach, *e.g.*:—

(a.) The permeability of the œsophagus.

(b.) In extracting the vessel, the determination whether the cardia is closed (in this case a certain resistance is felt as soon as the "bucket" touches the cardiac orifice).

(c.) One is enabled, as soon as the bucket is in the stomach, to study to some extent the contractions of the organ by observing how far, with what force, and at what intervals the thread is pulled further in, for the thread *alone* affords too few supporting points to be moved by the contractions of the œsophagus. In this way every traction of the thread hints at further locomotion of the apparatus in the stomach.

Let me now say a few words regarding the use of electricity in the treatment of diseases of the stomach. It has long been known

^a For the relative value of the "Probefröstück" and "Probemittagbrod," see the Berlin klin. Wochenschr. 1888. No. 32, 647.

from the experiments of Ludwig and Weber,^a von Ziemssen^b and Bocci,^c that galvanic and faradic currents, applied directly to the stomach of animals, produce contractions of the organ, and also an increased secretion of gastric juice. But for years past currents have been applied percutaneously over the human stomach by a number of observers—notably, Neftel,^d Fürstner,^e Leube,^f Richter,^g and others—with beneficial results in dilatation resulting from chronic catarrh, in nervous dyspepsia, and other diseases; and more recently Ewald and Einhorn^h demonstrated an increased motility of the stomach under the influence of percutaneous electricity, by the appearance of the salol testⁱ in the urine about one-fourth of an hour earlier than usual; and A. Hoffmann^j showed that the galvanic current, applied in the gastric region for twenty minutes, produces an abundant secretion of gastric juice.

Notwithstanding all this, it was considered very doubtful if electricity applied in this manner was able to produce to the full its beneficial effects, as it was considered questionable whether any direct peristalsis results, but rather (as held by Kussmaul,^k Pepper,^l and others), that the good results obtained in cases of dilatation were mainly attributable to the favourable influence of the contraction of the abdominal walls. Accordingly, Duchenne^m and Kussmaul,ⁿ and later, Bardet,^o Baraduc,^p Stockton,^q Ewald,^r and Boas^s have recommended direct electrification of the stomach, using various electrodes which were in fact all modifications of the stomach-tube, constructed so as to act as an insulator to the wire.

^a Kussmaul. *Arch. f. Psych. und Nerv.* 1877. Volume VIII., p. 205.

^b Von Ziemssen. *Klin. Vorträge.* No. 12. *Die Electricität in der Medicin.*

^c Bocci. *Lo Sperimentale.* June, 1881.

^d *Centralbl. f. d. med. Wissensch.* 1876. No. 21, p. 370.

^e *Berl. klin. Wochenschr.* 1876. No. 11.

^f *Deutsch. Arch. f. klin. Med.* 1879. Tome 23, p. 98.

^g *Berl. klin. Wochenschr.* 1882. Nos. 13 and 14.

^h *Verhandl. d. Vereins f. innere Med.* 1888. P. 58.

ⁱ Ewald and Seivers. *Klinik d. Verdauungskrankheiten.* II., 53.

^j *Berl. klin. Wochenschr.* 1889. Nos. 12 and 13.

^k *Arch. f. Psych. und Nerv.* 1877. VIII., p. 305.

^l *Philad. Med. Times.* May, 1871. P. 274.

^m Cited from Kussmaul.

ⁿ *Loc. cit.*

^o *Bull. Gén. de Thérap.* 1884. Tome 106, p. 529.

^p *Journ. de Med. Practitioner.* Dec., 1888. P. 455.

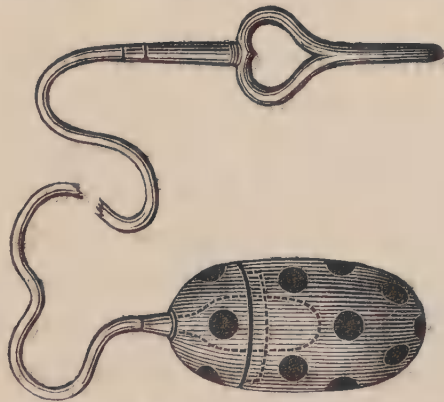
^q *N. Y. Med. Rec.* Nov. 9, 1889. P. 530. And *Amer. Jour. Med. Sci.* July, 1890. P. 20.

^r *Klinik d. Verdauungskrankheiten.* P. 64. *Berl.* 1889.

^s *Allgemeine Diagnostik der Magenkrankheiten.* P. 239. *Leipzig.* 1890.

The evident inconvenience of this bulky arrangement, and the fact that the tube containing the electrode had to be kept in the throat during the whole time the electricity was being applied, has prevented this method of treatment from attaining any great popularity, as only persons accustomed to the frequent use of the stomach-tube could bear the procedure at all, and even to them it causes considerable discomfort.

This important mode of treatment is, however, likely to receive a fresh impetus, in consequence of the recent production by Dr. Max Einhorn^a of a new electrode, by which the disadvantages alluded to have been obviated. It is constructed on the same principle as the "stomach-bucket" which has just been described, and once swallowed reaches the stomach without further artificial aid. The silk thread of the bucket is represented in the electrode by a very fine (1 mm. in diameter) rubber tube, through which a very fine, soft, conducting wire runs to the battery. The end-piece of the electrode consists of a hard rubber capsule, of the same size and shape as the "stomach-bucket," with many openings. In this capsule lies a metallic button, which is connected with the wire. The rubber capsule serves to avoid direct contact of the metal with the stomach-walls. The circuit is completed in the same way as in Bardet's electrode, by the water the stomach contains. The other (ordinary) electrode is best placed either on the back to the left of the seventh dorsal vertebra, or in front over the epigastric region, or is simply held in the hand.



The electrode is introduced and withdrawn in the same manner as the "stomach-bucket." No force is necessary for its withdrawal—one has only to make the patient swallow once or twice, and to make use of the moment when the larynx by this act ascends, and the passage becomes free to withdraw the electrode, which is now done with perfect ease.

^a N. Y. Med. Rec. May 9, 1891.

Dr. Einhorn further describes a series of test experiments made upon healthy persons, with the result that, in each case, after the application of direct faradism there was a marked increase in acidity. The conclusion that the faradic currents increase the production of the gastric juice seems to be justifiable.

As regards clinical experience, the most marked results have been obtained in cases of dilatation, and also in chronic gastric catarrh; the improvement in the latter cases being demonstrable by chemical analysis. Two cases especially are to be noted of very aggravated chronic gastric catarrh in which free HCl could never be found after the test meals; the same could be easily detected after the stomach had been faradised internally for ten minutes. Dr. Einhorn also mentions two cases of pure gastralgia which derived benefit from the internal application of the galvanic current.

I cannot pretend to have offered to you in this paper anything original, or even anything particularly novel; but I was desirous of bringing before the Section, however imperfectly, a subject which, in the course of some reading and a little observation, had been of particular interest to myself.

ART. VI.—*Some Recent Modifications in our Views of Enteric Fever and its Treatment.*^a By M. A. BOYD, M.D., F.R.C.S.I., M.R.C.P.I.; Physician, Mater Misericordiæ Hospital, Dublin.

SINCE Murchison wrote his classic treatise on Enteric Fever we have added almost nothing clinically to the accurate and scientific description he gave of the disease. He covered in that description almost the entire ground in connection with the disease and its history, and in the closeness of his reasoning as to its ætiology he foreshadowed all that bacteriology has since discovered regarding it. In fact, it is only in its bacteriological aspect that any additions have been made to the subject, and it is from this side alone that any additional knowledge is likely to come which can finally determine the mode of its origin. The additional bacteriological data, however, we now possess have considerably narrowed the issues, and enabled us to regard the disease from the standpoint of being an acute infective disease which heretofore

^a Read before the Section of Medicine in the Royal Academy of Medicine in Ireland, on Friday, December 18, 1891.

it was not considered, in which, like phthisis and pneumonia, a special bacillus plays the important part.

Since that bacillus was discovered by Koch and Eberth, and its peculiarities and mode of growth were studied, more especially by the latter observer, our views as to the ætiology of the disease have considerably changed, and the time has, I think, now come when, taking advantage of the experiments of various other bacteriologists, in addition, we may form more definite ideas as to its mode of propagation, to its prevalence at particular seasons, and the causation of the symptoms present in its various stages, as well as to suggest some rational means for treating it.

I shall first refer to the typhoid bacillus and its discovery. In 1880 Koch and Eberth almost simultaneously discovered in the intestines, the mesenteric glands and lymphatics, and especially in the spleen of patients dying of enteric fever, a bacillus, which, though frequently found in the intestines as the common *Bacterium termo*, assumed at particular seasons, or owing to some alteration in the normal vital resistance of the individual, an acutely infective process, infiltrating the adenoid tissue and lymphatics of the intestine, accompanied by the chain of febrile phenomena we designate typhoid or enteric fever. Owing to the difficulty of finding a suitable nutrient medium on which to grow it outside of the body, this bacillus could not be differentiated from other bacteria inhabiting the alimentary canal until Koch succeeded in isolating and growing it on dry gelatine plates; since then all pathologists are familiar with its appearance and mode of growth. So far all experiments have failed in producing the disease from these cultivations by inoculation; but bearing in mind it grows both as an aerophyte and as an anaerophyte, it may be innocuous in the former condition and infectious in the latter when in the alimentary canal, when the vital resistance of the tissues in that situation may be from some reason altered. What may produce these alterations I shall allude to presently. Gaffky, in his observations on this bacillus, has given us some valuable information as to its situation and growth. It is one of the few bacilli found to develop freely in water, and it grows abundantly in milk. He also found it in the soil through which water percolates, and it grew freely in all albuminous media. He also found it more abundant in all these media in the autumnal season more than any other—a fact of considerable importance. If, however, this bacillus is found so frequently in the food we eat, the water we drink, and in our

intestines, how, we may ask, is it that it does not infect the intestinal glands when present and produce enteric fever in every case? For we must all take it in at some time or other if it is not already present in our intestines. With this question I may link two others: why is it we do not suffer from pneumonia constantly when we always carry about with us the germs of the disease in Fränkel's diplococci; or why not frequently suffer from circumscribed or diffuse suppurations when the micrococci that produce them are frequently present in our blood or tissues?

Why we do not, recent investigations in bacteriology have made clear. Bacilli or micrococci are in themselves harmless either in the blood or tissues until the vital resistance of some tissue is lowered, from either functional alteration or injury, when they readily find a suitable soil in it on which to grow and multiply. It is by this growth and the chemical products generated during it that the mischief is produced, and the poisoning of the tissues around that are most susceptible to its action afford a further field for the growth of these micro-organisms.

Let me take, first, the experiments of a distinguished physiologist, and, secondly, the course of a fatal disease, with which, clinically, we are only lately becoming familiar, to illustrate my meaning. Professor Kocher, of Berne, in making experiments on animals by destructive injury to tissues, down even to the marrow of bones, with a hot iron, could not produce septic inflammation as long as the animal experimented on was healthy, but if he lowered the vitality of it by feeding it on putrid matters, permitting thereby septic micrococci to enter its blood, a septic inflammation was at once produced. The other disease I have alluded to in illustration—namely, septic or suppurative endocarditis—we know arises from either the staphylococcus or streptococcus when present in the blood from any accidental cause, finding a nidus in an inflamed endocardium or damaged valve, and the chemical product of its growth is then wafted in the blood current to set up mischief in other situations, where, from anatomical causes or lowered vital resistance, the blood and tissues cannot overcome its invasion. The germs of typhoid fever, like all other septic germs, are now regarded as in themselves harmless as long as the tissues with which they are in contact are healthy, else how can we explain the immunity from the disease that exists in healthy individuals who constantly either receive them through food or drink into the alimentary canal, or have them as a normal and constant resident?

This brings me to the vexed question of the ætiology of the disease. If we take it for granted that the bacillus of Eberth is, by its infiltration of the glandular tissue of the intestine, the cause of all the mischief (and, apart from the absence of the inoculation evidence, most pathologists are agreed that this is so), what are the conditions that favour or produce its acute infection of those glands?

We have, first, the evidence that this bacillus is found growing most luxuriantly, and, we must presume, consequently that it is more virulent and more capable of making a vigorous battle for its existence, in the autumn. But it must find the tissues with which it comes in contact in a weakened condition to get the upper hand in the struggle.

Are the intestines at this period of the year in a more weakly condition than at any other, and, if so, from what cause? I think we can answer that question in the affirmative.

Most of us are familiar with the gastro-intestinal troubles that are characteristic of the early autumn months, the gastro-intestinal catarrh especially; the catarrhal or autumnal diarrhœa; and the frequency of so-called bilious attacks at this season. How these catarrhs are produced we have a ready explanation in the rapid fall of temperature in the evenings, after, perhaps, a warm mid-day, when the action of the skin is suddenly checked, and no additional precautions as to clothing are adopted. All hospital physicians are familiar with the sudden onset of bronchial catarrhs at this season also, from the same cause, and the rapid filling of hospital wards with cases of asthma, emphysema, and fresh broncho-pneumonia in cases the subjects of phthisis during the previous summer and spring. Now, let us see if this gastro-enteric catarrh is a usual precursor of enteric fever. Murchison, with that acute power of observation which was characteristic of him, mentions it as a most usual symptom preceding and accompanying the fever in its early stages; and he further adds that catarrhal diarrhœa was frequently present preceding the fever, and that it was often difficult to say whether the disease would remain catarrhal diarrhœa or end in enteric fever. Now, it seems to me that this catarrh, in addition to being brought about by atmospheric changes or by food, may be produced also from the absorption of the chemical products of the typhoid bacilli growing on the intestinal contents, when present in large numbers in either food or drink containing them; and that this ptomain or toxin was only the weapon they used—as

Professor Burdon Saunderson expresses it—in their struggle for existence to weaken the vital resistance of the tissues with which they were in contact, and make it fall an easy prey. Why, however, should the glandular tissue be the first overcome in this struggle? The reason seems to me obvious, looking at it from a pathological point of view. Adenoid tissue is endowed with a very poor vitality, and very little power of resistance or of repair, when infiltrated or choked from any cause. We see this when it is attacked by a similar bacillus, the tubercular one, whose life-history, and the readiness with which it infiltrates and destroys glandular structures, are somewhat similar to the typhoid one in many ways. The epithelial shedding and proliferation of the mucous membrane which takes place must also weaken the defences against the bacillary invasion. The bacilli find the glandular tissue in a condition of derangement from the effects of this catarrh, and it becomes the centre of their habitation.

That this invasion is sudden, and followed by rapid changes in the glands, there can be no doubt. Murchison, for example, found infiltration and swelling of the glands in the case of a patient dying on the second day of the disease, and other observers bear similar testimony.

The entire process in connection with the gland, so far as the typhoid bacillus is concerned, from the time of invasion to death or disablement of the gland, is over in fourteen days—the normal time of enteric fever from a pathological point of view. After this period, however, a new set of enemies appear on the scene in the shape of the suppurative micrococci, which, forming colonies on the injured or necrotic tissues around the glands, begin to generate their peculiar toxins, producing the hectic character of the symptoms and temperature with which we are all familiar after the first fortnight of the disease, so that we must regard enteric fever as the result of the growth in the intestines of two sets of micrococci—the so-called typhoid bacilli producing the symptoms during the first fortnight, and the suppurative micrococci producing the characteristic symptoms of its further stages. That other micrococci, as well as these latter, occasionally infect the patient from the intestinal canal, there can be no doubt; and I have at present under my care in the Mater Misericordiæ Hospital a patient with a well-marked attack of erysipelas of the face, in the fourth week of his enteric fever.

If recent bacteriological work has enabled us to grasp these facts

with regard to the disease, we may ask ourselves what practical deductions can we draw from them, so as to enable us to treat it. Looking at the disease as primarily a catarrhal one of the intestines, and secondarily as one of septic poisoning, our treatment resolves itself into suitable diet and antiseptics. We know already how all-important is the treatment of enteric fever by bland and unirritating diet, and such as will be mainly absorbed by the stomach and duodenum, leaving little to be dealt with by the lower part of the small intestine.

The medicinal treatment of typhoid by antiseptics is latterly receiving that amount of attention which our more perfect knowledge of its bacteriological origin would suggest, and we see occasionally in the medical journals glowing accounts of the success of this method of treatment in the hands of some; while others confess it has not realised their expectations. As far as I myself am concerned, I have used this method of treatment for several years in both hospital and private practice, and have every reason to be satisfied with the results.

I do not profess to believe that it will abort a case of typhoid once the characteristic fever has begun, but I do assert that it will prevent, in the majority of cases, the septicæmia—for it is nothing but septicæmia with which we have to deal after the second week of the fever is passed. The typhoid bacillus has by this time done its work, so far as the intestinal glands are concerned, and hereafter we have only saprophytic bacteria and their effects to deal with. The characteristic hectic type of temperature during the third and subsequent weeks of enteric fever, such as we have in connection with suppurating cavities in the lungs or elsewhere, shows this to be the case.

In seeking for a suitable antiseptic for this purpose, we must choose one which will fulfil the following objects:—It must first exercise its effects in the intestinal canal, and not in the stomach; its action must be thorough, not alone antisepticising the contents of the bowel, but it must permeate the intestinal wall as well, where septic micrococci may have already established themselves, and even enter the blood. To fulfil these conditions the form of antiseptic must be, in my opinion, a gaseous one. We know how readily the intestines absorb gases, and pass them into the blood. The antiseptic I am in the habit of using is chlorine in an alkaline solution, as in an alkaline form it mingles best with the contents of the intestines, which in enteric fever exhibit a strongly alkaline

reaction. This treatment is not original, as Murchison, who expresses himself in general as dissatisfied with antiseptics, speaks favourably of chlorine, and regarded it as an admirable method of treatment. He administered it in an acid solution, which in my experience is not so satisfactory. That this method of treatment produces a fall in the temperature, and makes the type of the disease milder, there can be no doubt, and in over a fourth of the cases, when begun early, it brings the febrile process to an end about the fourteenth or sixteenth day.

Murchison, in his careful statistics, found only seven cases out of two hundred to terminate on the fourteenth day by the ordinary method of treatment, so the cessation of the fever by this method of treatment in such a large percentage must be more than a mere coincidence.

I do not claim for it that it is the best form of intestinal antiseptic, as more extended experience may enable me to procure a more beneficial one, and I hope on some future occasion to bring before the Section the results of my experiments on this subject in conjunction with our bacteriologist at the Mater Misericordiæ Hospital.

I have not, in these notes, entered the broader field of ætiological theories by trying to explain how enteric fever arises through the medium of sewers, or sewer gas; or why it is more prevalent among the wealthier classes than the poor, or whether it can arise as a miasma producing infection through the air—these are matters that I did not intend should enter into the scope of my paper, as I have been content to regard the disease from the bacillary point of view alone, and to see in it sufficient explanation of all the group of phenomena which we call typhoid or enteric fever.

ART. VII.—*Some Cases of Enterotomy and Colotomy.*^a By WILLIAM THOMSON, F.R.C.S.I.; Surgeon to the Richmond Hospital, Dublin.

THERE is no more remarkable development of modern surgery than the impetus that has been given to operative interference with the hollow viscera of the abdomen. The old terror, which even in my student days was held before us all, as to the almost certainly fatal results of interfering with the peritoneum, has

^aRead before the Section of Surgery in the Royal Academy of Medicine in Ireland, Friday, December 11, 1891.

vanished; but it was a very real terror with some even then. I remember the late Mr. Robert Adams once saying to me, after he had been present at an ovariectomy, "Thank God, I never had to do that." And his gratitude was a very fair reflex of the feelings of the senior surgeons of his day. It was the part of the younger men, with the audacity that belongs to youth, to show that the danger lay largely in bad methods, and that there were roads which if followed boldly, but at the same time with care, led to safety. The success which has attended ovariectomy has been followed by the removal of diseased intestine, portions of the stomach, and of the bladder, and with an amount of success that is among the greatest wonders of modern surgery. It is true that the older writers have narrated cases of extraordinary character, but they are few and far between, and they were often the result of accident rather than of selection. But it is to our own time we must refer the deliberate operation upon the intestinal tract as a generally accepted surgical procedure. When Mr. Bryant did his first colotomy in 1859, it had been done only once in London in the preceding ten years. The first case I saw was in 1876, and the second was one in which I was the operator. When I graduated I had never seen the operation done in any hospital in Dublin. I mention these points to show that operations upon the intestine were not always as common as they are now, and that within comparatively few years they were rarely practised.

Since I read a paper on lumbar colotomy in this Section two years ago, I have opened the ileum three times, and the colon five times, for the purpose of establishing an artificial anus. The two groups differ from each other in this—that the ileum cases were all done for acute obstruction, while the colon cases were, with one exception, done when there were no symptoms of acute obstruction.

CASE I.—A printer, aged forty; had been the subject of constipation for over a year. I was able to make out a tumour in the ascending colon, slightly movable, and somewhat doughy. In consultation the possibility of this being a faecal accumulation was accepted, and the man was treated accordingly; but no impression was made upon it. Later on he complained of irritation of the bladder, and an examination of the rectum revealed a tumour on the anterior wall in the situation of the prostate. In a few weeks the symptoms of complete obstruction suddenly supervened, and I was obliged to operate. A central incision showed the patient to be the subject of malignant disease. The omentum and

the mesentery were studded with small, dark, shot-like nodules. The tumour in the ascending colon was about the size of my fist, and was close above the cæcum. Removal of it, with such an amount of disseminated disease, was impossible; I therefore determined at once to open the ileum. The artificial anus was fixed in the abdominal wound in the ordinary way. The patient never rallied completely, and died in four hours. The tumour in the rectum was found to be of the same character as the others, which were sarcomatous.

CASE II.—The next case was that of a woman aged fifty, who had been suddenly attacked by pain followed by collapse. She had been treated for obstruction by means of belladonna and purgatives without benefit. Vomiting continued, the abdomen became distended and tympanitic, and when I saw her her condition was one of extreme peril; she was almost pulseless, and we decided to postpone operation for a short time until stimulating treatment could have some effect. As soon as possible afterwards I opened the abdomen; there was great difficulty in dealing with the distended intestine, and in endeavouring to trace the obstruction. I was able to feel a thickened, unusual mass near the sacrum, but I could not bring it up. The patient was almost moribund, and I had to hasten my work; I accordingly opened the ileum as before, and fixed the artificial anus in the wound. She had great relief from pain, rallied considerably, and there was a copious discharge from the bowel, and I hoped that all would go well; but she began to sink early in the following morning, and died in about twenty-six hours after the operation. At the *post-mortem* examination the obstruction was found. There was a mass of caseating glands over the lower lumbar vertebræ; some of these had quite broken down. The ileum, near its termination, was involved in this mass by old adhesions, and its lumen was reduced to the size of a goose-quill.

CASE III.—The next case was that of a young lady, aged twenty-one, whom I saw in consultation with Dr. G. H. Kidd and Dr. F. W. Kidd. She had been complaining for about a year, and had been treated for indigestion. When Dr. F. W. Kidd saw her she had considerable pain in the right iliac region, she was much constipated, had occasional vomiting, and had an elevated temperature. He discovered a tumour in the site to which she referred the pain. When I saw her the symptoms of obstruction had become urgent. The abdomen was distended, and the tumour could be felt somewhat above the cæcum. There was great tenderness everywhere, and her pain could be kept in subjection only by the use of morphia hypodermically. We agreed that an operation could not longer be delayed, and the next day I opened the abdomen—Messrs. Thornley Stoker and Corley, and Dr. F. W. Kidd assisting. The small intestines were greatly distended, and deeply congested. I at once passed

my hand into the cavity, and examined the tumour; it involved the ascending colon, was firm and fixed, so that it was impossible to move it towards the surface for further examination. Believing it to be malignant, we agreed that there was no course left but to open the ileum. This was accordingly done, and the bowel was fixed in the middle line. The patient rallied well, and was better next day. Her symptoms improved, but the discharge from the bowels never became solid. There was a constant escape of feculent fluid, which was so acrid that the skin of the abdomen became excoriated over a large extent, in spite of all our efforts to protect it. It would be tiresome to give all the details of this most painful case. Later on she was able to move to the country. In some months later the symptoms again became urgent, the tumour grew in size, ascites set in, and she finally died in January, 1890, six months after the operation.

My next group of cases consists of five, in which I performed anterior colotomy.

CASE IV.—A labourer, about fifty-five years of age, had complained of diarrhœa for some months, and had been treated by his doctor with various astringents. The number of motions daily were as many as twenty. He had pain, passed blood, and was emaciated. No examination of the bowel had ever been made. On passing my finger into the rectum I found a large ulcerated epithelioma about two inches from the orifice. It was quite fixed, all the surrounding parts were infiltrated, and the question of removing the mass was put aside. I accordingly determined to perform an anterior colotomy. A two-inch incision was made in the linea semilunaris, an inch above a line passing from the umbilicus to the anterior iliac spine. There was no difficulty in recognising the bowel, which was secured in the usual way, and opened at once. The patient did well, and lived for nine months, when he died from extension of the disease.

CASE V.—In July, 1889, a gentleman, aged forty-eight, consulted me for chronic diarrhœa. He stated that he had been suffering since the preceding January—that he had been treated for catarrh of the bowels and deranged liver. He had lost about one stone in weight; the motions were about twenty at night and six in the daytime. I asked if his rectum had ever been examined, and he said not. On passing my finger into the rectum I could just reach the lower margin of a tumour involving the whole wall. I could not detect any ulceration, and he said he had no pain, and he had not seen any blood. Dr. Ball met me in consultation at his house next day, and after a full examination we agreed that colotomy ought to be done. This I did, with the assistance of Dr. Thornley Stoker, in August. I determined to open the colon anteriorly, and at a much

higher level than is usually selected, so as to get as far from the disease as possible. The point was somewhat above a line passing transversely through the umbilicus. I selected, as before, the linea semilunaris. Here I met with an unexpected difficulty. I found the colon easily enough, but it was for some time impossible to bring it out of the wound. Its ligament was extremely short, and when at last I was able to bring out a portion of the bowel and fasten it to the skin, there was so much tension that I feared that the stitches would give way prematurely. The bowel was opened at once, but there was no discharge of fæces until next day. The patient was up in about sixteen days, and was able to travel to London on business on the thirtieth day after the operation. His subsequent history may be told in a few words. For nearly two years he was able to discharge very onerous public duties; the bowel acted perfectly about once a day. In July of this year he had ischio-rectal abscess, and there was evidence of extension of the tumour downwards. The liver became involved by secondary deposit; ascites followed, and the patient died just two years from the date of the operation.

CASE VI.—An old soldier, aged sixty-three. He had been suffering from intermittent attacks of constipation for two years, and had been treated from time to time in the Whitworth Hospital. There was no trace of disease in the rectum. On his last visit (July, 1890) for treatment he suddenly became very ill. The intestines were much distended, and there was frequent vomiting. He was removed to the surgical hospital, where I saw him. He was much collapsed. An examination of the abdomen showed great distension of the transverse colon, as far as the splenic flexure. I determined upon an exploration, and opened the abdomen high up on the left side, in the linea semilunaris. The small intestines gave great trouble, and it took some time to find the colon, which was at last recognised by the fingers grasping a small scybalous mass. Passing up to the splenic flexure, I found a mass of fæces there. There was obviously some narrowing at this part, but I was able to press the mass onwards. The question of opening the transverse colon was discussed, but the man was almost pulseless, and we felt that his life would be seriously imperilled by making a second incision. As the fæcal lodgment could be moved onwards I believed that the way could be kept clear subsequently by the use of medicines and enemata through the opening in the colon. I then fixed the gut, and opened it. There was a free escape of contents. Next day the distension had disappeared, and the vomiting had ceased. The patient made an uninterrupted recovery, and the bowels acted with fair regularity. He died six months later of asthenia, but was not, I believe, troubled by any obstruction.

CASE VII.—A man, aged forty-two, sent to me by Dr. J. M. Prior Kennedy, of Tullamore, in June, 1890. For nine months he had suffered

from alternate constipation and diarrhœa. At times he suffered much pain and passed blood. The cause of his troubles was recognised, and he was sent to Dublin. He stated that he had lost more than a stone in weight. The diarrhœa was very distressing, as he required to go to the closet sometimes 30 times in the 24 hours. An examination of the rectum revealed a hard, rugged, ulcerated stricture which would not allow the finger to pass through. There was extensive infiltration, and the diseased structures were quite fixed to the deeper parts. There was no course open but the performance of colotomy. For the first time I did it in two stages. The loop of bowel was drawn out and stitched through the serous and muscular coats to the skin. The dressing consisted of iodoform ointment applied under protective, so as to avoid the trouble of adhesion of dressings to the wound. On the fifth day I opened the bowel and clipped away the lips—a perfectly painless process. The patient left bed on the eighth day. The diarrhœa was quite stopped, the bowel discharged itself regularly, and the patient was able to leave hospital in three weeks. I have since heard that he suffered once from prolapse, which was reduced by Dr. Moorhead, of Tullamore, with some difficulty.

CASE VIII.—A woman, aged fifty, admitted August, 1890. Two years ago she had what appears to have been an ischio-rectal abscess, for which she was treated in a hospital. She said she received injections, and that the fluid returned through the vagina. Her condition was a very miserable one. The whole of the buttocks were riddled with openings. The rectum was occupied by a malignant mass, and the finger could be passed through the vagina into the bowel. She was disgusted with her own condition. I explained to her what could be done, but that her disease could not be cured: and as she was most anxious for some relief I resolved to open the colon in front. This time I went a step further. The gut was found at once, and drawn out. I then passed a thick needle through the mesentery, and allowed the ends of the instrument to rest upon the abdominal wall, transversely to the wound. Three or four light sutures fixing the bowel in position in the wound completed the operation, which lasted little more than a quarter of an hour. The bowel was opened three days later, and the patient was soon discharged.

There are a few points which these cases bring into prominence, to which I will allude as briefly as possible. It will be noted that, in the first group of cases of operation upon the ileum, I lost two out of three; and that in the second group in which the colon was opened all survived. There does not appear to be any special reason why the opening of the ileum should be more fatal than

the opening of the colon, if the conditions are the same. Yet enterotomy, as it is called as distinguished from colotomy, is undoubtedly a very fatal proceeding. Treves collects 61 cases of non-malignant obstruction, of which 41 died within 10 days, and 24 within 48 hours. In 48 cases of enterotomy in malignant disease, 42 died—28 within 48 hours, and the rest within 10 days. The reason of this great mortality lies in this—that enterotomy is hardly ever done as a deliberate operation, but as a last chance in a case of obstruction in which that obstruction cannot otherwise be relieved. Then the case is usually an acute one; the intestines have become distended and deeply congested, and there is vomiting—in other words, we add to an already established serious shock the shock of an operation, which involves a search for the obstruction, and finally the opening of the bowel. In two of my cases the patients were already in a state of collapse when I operated. The same condition almost of necessity exists in all such cases, and under this accumulation of adverse circumstances, we have rather to congratulate ourselves when we save any.

Now, on the other hand, colotomy is usually done at a selected time. There is not any serious obstruction, and all the conditions of time and the preparation of the patient are favourable.

All these cases of colotomy were anterior. On this question of anterior or lumbar colotomy very much has been written, and probably the result is that there will always remain upholders of each as the preferable method. My own experience is, that the anterior operation is in most cases more easy to perform, and that the position of the opening is more convenient for the patient than in the lumbar region. But it does not always happen, as some seem to think, that we make an incision through the peritoneum, and find the colon quietly waiting to be caught. Very often it is a bit of small intestine that presents, and we must search, and search diligently, before we find what we want. Mr. Allingham and Mr. Cripps, who have done the operation frequently, state that the colon is to be found at once only in one-half or one-third of the cases. In this respect the lumbar operation has the advantage, because the bowel is in more fixed relation to the primary incision. Then, I agree with Mr. Bryant and Dr. Ball, that in a case of much distension the lumbar operation is better, because we have not to dread the extrusion of small intestine should we fail to hit upon the colon at once.

But the chief claim of the anterior operation must be based on

the fact that it is an abdominal section, which gives us at once great possibilities. Sometimes it is not easy to localise a cancerous growth—such a thing has happened before now of opening the colon in the lumbar region on the wrong side of the obstruction. The anterior opening gives us all facilities in our search; we can enlarge it, we can examine the whole course of the colon—we may even excise a stricture. We may divide the gut completely, invert the edges of the lower part, and thus shut off the rectum permanently from any chances of the irritation of the bowel contents. Now only one of these advantages belongs to the lumbar operation, and for these reasons I believe that the anterior will gradually become the far more usual one.

In my last two cases I adopted the plan of dividing the procedure into two stages, and where there is time this is a great advantage. The parts are completely adherent before the bowel is opened, and there is then no fear of the passage of fæces into the abdomen. In the last case I used the pin for transfixion of the mesentery, thus, as it were, hanging the intestine in a loop over the steel bridge which passed from side to side of the wound. If the ligament is long enough to allow the bowel to be drawn out freely, this plan is most simple and satisfactory. The lips of the small wound lie close about the gut, adhesions take place in a very few hours, and there is really very little after-trouble. Everything is secure in a few days, and all that remains to be done is to open the bowel and pare away the edges—a proceeding which is curiously quite painless. But it has the further advantage, that the pin so shapes the bowel as the adhesions become firm, that a very good “spur” is produced, and there is less likelihood of fæcal matter travelling down to the rectum. I may say, however, that except in one case there was no trouble from this, and that in the others the colon discharged all its contents through the artificial opening.

With regard to the position of the incision, I have made it at some point above a line passing from the umbilicus to the anterior superior spine of the ilium, and always in the *linea semilunaris*, as recommended by Dr. Ball, because the parts are thin, there is little or no hæmorrhage, and the rectus muscle is not interfered with. In the last case no vessel was ligatured.

As to the length of the incision, the smaller it is the better. I begin with two inches, and extend the opening if necessary. If the abdominal wall be fat the wound must be made larger, to

allow of manipulation, unless the colon happens to be at once exposed; but in the majority of the cases the wound was of small extent, and I certainly do not agree in the advice to make the wound four inches in length at the outset.

On the question as to when we ought to do colotomy for cancer some difference of opinion exists. Ought we to operate at once when the disease is discovered, although the symptoms may not be urgent, or must we wait until we are forced to do so? Malignant disease of the rectum is very insidious, and has usually been progressing slowly before the surgeon is consulted; but the facts that the necessary examination is made, and that the disease is discovered, show that there are already special symptoms present to indicate it—constipation, diarrhoea, wasting, pain, or bloody stools. The growth has reached a stage in its development when it manifests its presence, and has passed out of the period of slow and undemonstrative progress. I have myself no doubt that if any of the symptoms mentioned has become marked, and that the disease is recognised—always assuming that it cannot be directly removed—colotomy ought to be performed without much delay. It is reasonable to suppose that in a disease such as this the passage of fæces over it does not act as an emollient, and that the frequent action of the sphincters does not tend to soothe it.

One of the most frequent causes of epithelioma is continued irritation. We recognise that fact in all our practice, and we try to remove it. Rest is an important therapeutic agent elsewhere; why should it fail to be beneficial in the rectum? Therefore, I think that those who would wish to postpone the day of operation, perhaps deterred by the risk, are hardly giving effect to the principle which underlies their practice on other regions. At the present moment the anterior operation shows a mortality of 53 per cent., and the lumbar of 31 per cent.—both sufficiently high to leave much room for improvement. But I think that if we knew all particulars of the cases we should find many in which operation comes in as a last resource—when there was the shock of acute obstruction already present, as in my own enterotomies, and when everything favoured failure rather than success. Early operation can be done under the best circumstances. The advance of the disease is no longer helped by direct and increasing irritation, the comfort of the patient, as compared with his frequently troublesome diarrhoea or temporary obstruction, is secured as far as it is possible, and life is prolonged. For these reasons I believe we shall do best if we decide for action and not inaction.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Diphtheria : its Natural History and Prevention. Being the Milroy Lectures delivered before the Royal College of Physicians of London, 1891. By R. THORNE THORNE, M.B. Lond., F.R.C.P., F.R.S.; Assistant Medical Officer to her Majesty's Local Government Board, &c. London: Macmillan & Co. 1891. Pp. 266.

It is with much pleasure that we welcome this edition of Dr. Thorne's valuable Milroy Lectures. The work is well worthy of its author's reputation, high though it be already, and the subject is one of the most important that could be chosen. Diphtheria, as Dr. Thorne shows, is steadily, if not rapidly, extending its ravages among us, and, as yet, we seem unable to cope with it successfully. Sanitary works, cleanliness, and other hygienic measures, have considerably diminished the mortality from the so-called "zymotic" diseases, whereas none of our modern improvements have checked the spread of diphtheria. Under these circumstances, although it may not yet be possible to clear up all the mysteries connected with this disease, the first step towards improvement is to ascertain clearly the present state of our knowledge, and on this subject Dr. Thorne's lectures will be found to be the standard authority.

Dr. Thorne calls attention to the change in the distribution of diphtheria which is taking place. Formerly the disease used to be far more rife in sparsely-peopled districts than in towns and crowded localities. For some time past, however, a specially-marked increase of its incidence is in progress in large cities and towns. The disease is becoming, in fact, one more and more affecting urban populations.

With regard to the influence of soil, site, and locality on diphtheria, we read—"Soil, and especially *surface soil*, when considered in connection with relative altitude, slope, aspect, and prevailing rainfall, has, I believe, concern in the maintenance and diffusion

of diphtheria, and has very possibly some relation with its beginnings. Speaking generally, I think that the experience of careful investigations extending over a number of years is to the effect that when a surface soil is, by reason of its physical condition and topographical relations, such as to facilitate the retention of moisture and of organic refuse, and where a site of this character is in addition exposed to the influence of cold wet winds, there you have conditions which do tend to the fostering and fatality of diphtheria, and which also go to determine the specific quality of local sore-throat."

There are several tables illustrating the importance of age and season; the greatest number of cases, both actually and relatively, both fatal and non-fatal, occurring between the ages of three and twelve years, and the disease being most prevalent during October and November, then subsiding slowly, and being least frequently met with from May to July. All this statistical material is worked up with the greatest care, and will repay study.

In the second lecture Dr. Thorne calls attention to the great difficulty which is met with in attempting accurately to define the disease "diphtheria." Before and at the commencement of most epidemics of this disease many cases of ill-defined throat-disease are met with, and many such occur also during and after the regular epidemic. "Are affections of this ill-defined and apparently trivial kind capable of passing, by a process of development, from an innocent to a specific form of throat-disease? or is it that the local mischief they occasion provides a soil favourable to the reception and multiplication of the contagium of diphtheria?" Dr. Thorne seems to hold both of these views. He believes that there may be a progressive increase in virulence—"a progressive development of the property of infectiveness"—until the epidemic culminates in true diphtheria; and also that there is such an important relationship between diphtheria and a morbid condition of the mucous membrane of the fauces as to intimate some doubt whether the contagium of diphtheria ever finds in a throat, the mucous surface of which remains unabraded and unaltered by reason of local disease or otherwise, the soil necessary either to its progressive maturation or to the production of those specific changes which follow on its reception and multiplication. We do not see any reason why both of these views should not be true. On the one hand we know by experimental research that the same micro-organism can vary enormously in virulence, and that its

infectiveness can be artificially increased or diminished—for example, the same organism which often produces boils or simple subcutaneous abscesses can produce affections of every degree of gravity, until, in its highest virulence, it produces, when introduced into a living body, the most rapidly fatal blood-poisoning.^a On the other, many instances are known in which one organism, so to speak, opens the door by which a second organism obtains entrance into the tissues and organs.

In connection with the last-mentioned subject is the question of the identity or otherwise of scarlatina and diphtheria. The opinions and observations of several authorities—Bond, Parsons, Ballard, and others—are quoted. Dr. Thorne thus sums up:—

“One thing at once strikes the reader, and that is the marked sequence of the events narrated. It is the scarlatina that almost always takes the precedence of the diphtheria. The few instances in which the reverse takes place may easily be accounted for by the well-known circumstance that two different infectious fevers may run their course synchronously in the same person, the characteristic features of both undergoing some modifications. And I would submit that just as is the case with regard to the non-specific forms of sore throat to which I have referred, so also in the case of scarlet fever does the morbid condition of the fauces supply the soil favourable to the reception of the diphtheria contagium, the scarlatinal throat thus acting as a predisposing cause to diphtheria.”

With regard to the relation between faulty sanitary circumstances and occurrences of diphtheria, Dr. Thorne's views are important, and are at variance with those generally held. He says:—“I would at once say that no trustworthy evidence is forthcoming to show that polluted water supplies have ever caused diphtheria; whereas, on the other hand, there is abundance of negative evidence in the opposite direction.” With regard to sewage-polluted air, he regards it as operating in much the same way as the scarlatina poison—viz., by causing non-specific sore-throat, or in some other way preparing the human system for the reception of the specific infection of diphtheria.

The third lecture chiefly treats of the relation of diphtheria to the gathering together of children in schools. Among these children diphtheria seems to prevail more than among any other class, and that for several reasons. These children are at the most susceptible period of life; they are closely arranged side by side; ventilation is often imperfect; faulty sanitary surroundings

^a Levy. *Archiv f. Exper. Pathol. u. Pharmacol.* 1891.

often cause non-specific sore-throats; children, especially girls, kiss one another, and are apt to transfer sweets from mouth to mouth. Dr. Thorne suggests that the recent increase of diphtheria may have a connection with the increase in the number of children who attend school regularly.

The practices of kissing patients suffering from an infectious disease and of carrying them in the arms are alluded to. Many cases of diphtheria have been caused in this way. "In one hospital there is a rigid rule that no diphtheria patient shall be lifted or carried about, and in that institution no nurse has for a long series of years contracted the disease. In another, regulations of like stringency are not observed, and nurses tending the sick not infrequently endeavour to alleviate the distress of their little patients by fondling them and carrying them about, and in this institution diphtheria among nurses has all but amounted to an epidemic prevalence."

In the fourth lecture a careful account is given of several epidemics in which it was ascertained that milk was the vehicle by which the virus was conveyed. Dr. Thorne comes to the conclusion that the milk derived its infectiveness directly from the cows; that milk derived from cows suffering from an apparently trifling disease, a condition called "chapped nipples," may produce diphtheria in human beings and other susceptible animals—*e.g.*, cats. A long account is given of Dr. Klein's researches on this point.

In the last lecture some useful hints are given on the prevention of the disease—*e.g.*, isolation, the closing of schools, the systematic examination of the throats of the children, disinfection, boiling milk before using it, &c. The last point—boiling milk—Dr. Thorne lays much stress on. There are three appendices containing Local Government Board directions as to closing infected schools, and on the general methods to be adopted in places attacked or threatened by an epidemic.

The whole book is very well written, and extremely interesting, and contains the best account we have as yet obtained of the natural history of diphtheria. There is only one matter in which we could wish Dr. Thorne had seen his way to compile his book differently. It is written too much from the standpoint of the Medical Officer of the Local Government Board. Local Government Board Reports are the source of most of the quotations, and Government inspectors are the authorities most largely

quoted. We regret this narrow standpoint. If the author could have taken a wider view of the disease, if he had alluded more fully to the foreign experimental work which has been done in connection with this subject, if he could have paid rather more attention to the rest of the world outside England and Wales, we believe this book would have been even more valuable than it is.

RECENT WORKS ON TREATMENT.

1. *La Pratique journalière des Hôpitaux de Paris.* Par le PROFESSEUR PAUL LE FORT. Paris: J. B. Baillière et fils. 1891. Pp. 356.
2. *The Treatment of Typhoid Fever, especially by "Antiseptic" Remedies.* By J. BURNEY YEO, M.D., F.R.C.P.; Professor of Clinical Therapeutics in King's College, London, and Physician to the Hospital. London: Cassell & Co. 1891. Pp. 70.
3. *Prescribing and Treatment in the Diseases of Infants and Children.* By PHILIP E. MUSKETT, late Surgeon to the Sydney Hospital; formerly Senior Resident Medical Officer, Sydney Hospital. Edinburgh and London: Young J. Pentland. 1891. Pp. 293.
4. *Prescriber's Companion.* By THOMAS SAVILL, M.D. Lond., M.R.C.P.; Medical Superintendent of the Paddington Infirmary. Second Edition, revised by the author, assisted by T. E. HILLIER, M.B., M.A., Cantab. 1891. London: John Bale & Sons. Pp. 48.

1. PROFESSOR LE FORT has earned a debt of gratitude at the hands of all practical physicians by focussing in his little work the views on treatment entertained by the most brilliant living representatives of the French school of medicine and surgery.

His work, described on the title-page as an "aide-mémoire" and a formulary of applied therapeutics, embraces 518 opinions on the most novel and varied cases by no fewer than 135 practitioners. Among them we find such names as Ch. Bouchard, Charcot, Debove, Dieulafoy, Dujardin-Beaumetz, Alf. Fournier, Grancher, Félix Guyon, Hallopeau, Hayem, Jaccoud, Landouzy, Lannelongue, Ledentu, Peter, Pinard, Potain, Germain Sée, Paul Segond, Tarnier, Terrier, Tillaux, Verneuil, &c.—truly a goodly list.

The plan of the book is this—a disease is named in alphabetical

order. Under each such entry authorities and their methods of treatment are then given—a uniform classification being adopted to facilitate reference, under the headings of local treatment, general treatment, regimen, and prophylaxis. Examples of the entries are: Antisepsis, dressing of wounds, diseases of the nervous system, the digestive system, the heart and circulation, the chest, fevers, and so on. We have repeatedly referred to this book since its publication and never without profit and satisfaction.

2. Dr. J. Burney Yeo's *brochure* is a valuable contribution to the literature of the treatment of enteric fever. Its object is to point out the importance of securing general and local antisepsis in this fever—more especially the latter—that is, intestinal antisepsis.

It may, perhaps, be necessary to explain that, in the words of Dr. Yeo, "the idea of an *antiseptic* treatment of certain forms of disease has been greatly misunderstood or intentionally misrepresented by those who for some inscrutable reason dislike it; and those of us who have been bold enough to entertain this idea have been credited with the crude intention of attempting to slay these parasitic morbid agents 'in a direct and simple manner,' and we have been gravely told that our so-called antiseptic methods are so murderous that our patients and not the microbes fall victims to them." Dr. Yeo shows that every analogy in nature points to the possibility of effectually modifying the life-history and activities of all living things by even slight modifications of their environment. The real aim of the antiseptic treatment of the infective diseases is to modify or counteract the injurious activities of the living parasitic agents of these diseases. Antiseptic methods, too, may act either by preventing the formation of the poisonous animal alkaloids, or ptomaines, to which pathogenic microbes seem or are believed to give rise; or by destroying these ptomaines when formed; or, lastly, by promoting their discharge from the body.

After giving a very full account of the various means employed to secure intestinal antisepsis, Dr. Yeo proceeds to speak highly of the value of free chlorine in enteric fever—a remedy recommended long since by Sir Thomas Watson and more recently by Murchison.

The liquor chlori of the Pharmacopœia may be prescribed in 20 minim doses with the mineral acids, or we may prepare a fresh solution of chlorine gas as recommended by Dr. Yeo.

"Into a twelve-ounce bottle put thirty grains of powdered potassic chlorate, and pour on it 40 minims of strong hydrochloric acid. Chlorine gas is at once rapidly liberated. Fit a cork into the mouth of the bottle, and keep it closed until it has become filled with the greenish yellow gas. Then pour water into the bottle, little by little, closing the bottle, and well shaking at each addition until the bottle is filled." . . . "To twelve ounces of this solution for an adult, I add twenty-four or thirty-six grains of quinine, and an ounce of syrup of orange peel, and I give an ounce every two, three, or four hours, according to the severity of the case."

Dr. Yeo says that this is pleasanter to take than the official liquor chlori. The tongue cleans quickly, and the fœtor of the evacuations subsides. Dr. Yeo thinks that we obtain not only an intestinal but also a general antiseptis by this treatment.

We should not be doing justice to Dr. Yeo did we lead our readers to suppose that his "lecture," for such it was in its original form, is intended merely to sound the praises of the chlorine treatment of enteric fever. As a matter of fact, in it will be found a very complete account of the antiseptic treatment in general, including diet, management of the sick-room, and kindred topics.

3. Mr. Muskett's book hails from the Antipodes, but was printed and published in Edinburgh. Two quotations face the title-page and give the key to the *raison d'être* of the work. They are from Dr. Charles West and Sir William Jenner respectively, and run thus—"Children will form at least a third of all your patients," and "When you see a sick child, don't always think of grey powders."

Opening with a list of works referred to in the text, the book is divided into three parts. The first gives the drugs in alphabetical order, with the dosage and therapeutics of each in the diseases of infants and children. A vast number of elegant formulæ will be found in this part. The second part is devoted to the treatment of disease in infants and children—the different diseases (both medical and surgical) being now entered in alphabetical order. This division of the book is by far the largest and occupies nearly 200 pages. The entries are really very full and on the whole satisfactory. Under the heading "Scrofula," we read of the "*alphabetical quadrilateral of health*"—namely, bathing, clothing, diet, and exercise. In this same article the author quotes with approval Dr. Angel Money's fanciful description of

the soles of the feet—"those nervously sensitive external kidneys." A short third part includes a number of useful dietetic receipts, or, as Mr. Muskett calls them, "recipes."

The whole is wound up by a very copious index, in which, however, both drugs and diseases are mixed up in a somewhat incongruous and inconvenient way: for example, "chicken broth" is immediately followed by "chicken pox." May we suggest to the author to have two separate indexes in his second edition, to the early appearance of which we look forward with confidence.

4. Dr. Savill's booklet contains, in the first instance, a large number of selected prescriptions which he has found most useful in his private, hospital, and infirmary practice, as well as a list of the doses and strengths of the more powerful official and non-official drugs, in the most condensed form which was possible.

The second part contains tables of weights and measures, hints on ventilation and warming, disinfection, baths, prevention of bedsores, massage, electricity, infant feeding, and miscellaneous therapeutical information—the whole forming a wonderful example of literary condensation.

On the Simulation of Hysteria by Organic Disease of the Nervous System. By THOMAS BUZZARD, M.D., Lond.; F.R.C.P.; Fellow of King's College, London; Physician to the National Hospital for the Paralysed and Epileptic. London: J. & A. Churchill. 1891. Pp. 113.

THERE is probably no purely medical question which it is more difficult to decide than whether a case of nervous disease is in its nature hysterical (functional) or organic; and there is none in which the correctness of the diagnosis is of more importance both for prognosis and for treatment. Dr. Buzzard's little book is an attempt to aid the practitioner in coming to a right conclusion. Its object is to draw attention to the frequency with which symptoms, liable to be looked on as hysterical, are found to be really due to structural changes in the nervous system. The book is entirely clinical in character; a considerable number of cases are narrated, including, in the majority of instances, their after-history. The clear, accurate, and interesting narration of these cases adds much to the value of the book.

Dr. Buzzard first describes a number of cases of a form of Para-

plegia which he believes has not hitherto been noticed, and in nearly all of which the question arose as to the functional or organic nature of the affection. In these cases the weakness showed itself in inability or difficulty in flexing the thigh on the body. The patients could walk, more or less, but had difficulty in going upstairs or in raising the foot on to a chair. The reflexes and electrical reactions in the legs were normal, and many of the cases had been believed to be hysterical. Dr. Buzzard, however, considers that they were due to an isolated Atrophy of the Iliopsoas muscle.

The next point he calls attention to is the importance of the absence of the knee-jerks in a young woman. Several cases, previously thought functional, are described, in which this symptom was absent, and which, as the result showed, were cases of Friedreich's ataxy. The clinical features of disease are strikingly brought forward.

After some remarks on Urinary Troubles in functional and organic disease, attention is drawn to the importance of the Plantar Reflex—"It is a rule of almost universal application, according to my experience, that the plantar reflex is either entirely absent or very feebly indeed expressed in cases of hysterical paralysis. Sometimes by perseverance in very elaborate titillation of the foot-sole the reflex is produced, and occasionally it is easy to see that a good deal of voluntary action is expended in restraining the muscular contraction. But usually there is a simple absence of the plantar reflex, the stimulus being felt as a touch only, even in persons who are naturally very ticklish." "Its presence affords rather strong presumptive evidence in a doubtful case of the affection being of organic, not simply functional, character. It is interesting to observe that it will sometimes be observed to be absent only on the side affected with hysterical paralysis, where this is confined to one lower extremity." Several very interesting cases are described, illustrating these points.

With regard to the so-called Tendon Reflexes, we are glad to see that Dr. Buzzard states that in hysterical paraplegia these reflexes may be increased, and ankle-clonus may be present. In some of the best-known works on nervous diseases, the importance of the latter phenomenon is, we believe, estimated much too highly; it is said that its presence is almost a positive proof of organic disease—a view which we agree with Dr. Buzzard in thinking erroneous.

The rest of the book, more than 60 pages, consists of an interesting

and valuable discussion on the differential diagnosis between Hysterical Paralysis and that due to Disseminated Sclerosis—a subject “which is apt to offer diagnostic problems often of almost insoluble intricacy.” A large number of cases of disseminated sclerosis, often extending over many years, are related, in which at first the diagnosis of hysteria had been made, and we are told how very gradually—perhaps after lengthy periods of improvement—the characteristic signs of the disease manifested themselves. The points of most importance to which Dr. Buzzard draws attention are the following :—“An alleged sudden loss of power in a limb of an apparently young female, a localised numbness, or ‘pins-and-needles’ sensation, or a complaint of loss of sight in one eye, are symptoms familiar enough as expressions of functional trouble. But they are, no less, modes in which organic disease of the kind which we are discussing is very apt to make its first appearance. These local symptoms may clear off after a short time, just as would be the case if they were of hysterical origin. The girl recovers her sight or the use of her limb, and nothing more is heard of the numbness. A little later, perhaps, loss of sight in the other eye is complained of; a ‘pins-and-needles’ sensation is described in some other parts; another limb is said to be very weak. The opinion that the symptoms are due to hysteria may very possibly appear to be confirmed by this re-appearance of trouble in other situations; or the patient complains, perhaps, of weakness and stiffness in both legs, which increase so that in six or eight weeks she cannot stand. Then comes a rather rapid improvement, so that she recovers her power completely. Sooner or later—in some cases after an interval of years—the failure of power recurs. After recoveries and relapse of this kind the characteristics of confirmed disseminated sclerosis show themselves.” “In a doubtful case the persistence of plantar reflex should distinctly weigh in the direction of a diagnosis of organic disease, its absence lending support to the view that the affection is functional.” “I cannot help thinking that the view still generally held that a shifting of loss of power from one limb to another is characteristic of hysteria is quite an error. The hysterical woman who has lost all power in her legs will, it is true, very often later on (whilst still paraplegic) lose the power of one arm, usually the left; but I have not found that she is prone to lose the power in a limb, then recover it, and then lose it in another. It seems to me that the idea of this shifting powerlessness being strongly

confirmatory of hysteria has arisen from mistakes in diagnosing as hysteria cases of disseminated sclerosis. And equally so, the occurrence of numbness, 'pins-and-needles' sensation, sometimes at one part and sometimes another, points with considerable distinctness to disseminated sclerosis." "We shall find, I think, that the hysterical patient, as a rule, when loss of sight of an eye is in question, is quite blind on that side, and has usually become suddenly blind, whilst the patient with sclerosis has only more or less obscurity of vision which has come on somewhat gradually." "I am disposed to place on the tremor or intentional movement a diagnostic value higher than that possessed by any other symptom of disseminated sclerosis. I cannot call to mind one case in which this symptom was present which the sequel proved was simply functional."

There are many other important diagnostic points to which Dr. Buzzard calls attention, but we have mentioned enough to show the valuable nature of the work. The numerous cases described at length, and illustrating the various points touched on, render it a charming and most interesting book to read. We have ourselves much enjoyed it, and we warmly recommend it.

Atlas of Clinical Medicine. By BYROM BRAMWELL, M.D.; F.R.C.P., Edin.; F.R.S., Edin.; Assistant Physician to the Edinburgh Royal Infirmary; &c., &c. Vol. I. Parts II. and III. Edinburgh: Printed by A. & T. Constable at the University Press. 1891. Folio. Pp. 48, and 44.

It was a gratifying task for us to review the first part of this splendid work in the number of the *Journal* for June, 1891 (Vol. XCI., page 522). On that occasion we expressed the opinion that the *Atlas* reflected the greatest credit upon author and publisher alike. This verdict is confirmed by a study of the second and third parts, which have since then been placed in our hands. The issue of the third part was unavoidably delayed in consequence of an attack of influenza, from which the author suffered. Part IV. is promised for the 1st of May, 1892.

The scope of the work has been already indicated in our former notice, and it only remains for us on the present occasion to mention the topics which are discussed in the second and third parts.

Part II. opens with a detailed description of Addison's disease, based on a typical case of the malady and on two cases which

resembled it. Dr. Byrom Bramwell strongly inclines to the view that the typical fibro-caseous lesion of the supra-renal capsules is tubercular. The theory as to the manner in which this lesion produces the symptoms of Addison's disease which seems to him most satisfactory is that which supposes—(1) that the lesion of the capsules is primary; (2) that as a result of that lesion the nervous structures in the neighbourhood of, or connected with, the capsules are implicated; and (3) that it is to the nerve disturbances produced in this manner that the symptoms of the disease are for the most part due. The clinical case upon which Dr. Bramwell's remarks are based is illustrated by two exquisite coloured plates lithographed by Messrs. M'Lagan & Cumming, of Edinburgh. The first of these is a portrait of the patient, a young lady aged twenty-six. The second shows the bluish-black (black-berry-juice-coloured) pigmentary deposits on the tongue of the patient and also the deep pigmentation of the nipple and the areola of her right breast.

The remaining topics discussed in this part are diffuse melanotic sarcoma, with pigmentation of the skin, and "Hodgkin's disease" or lymphatic anæmia. Of the latter an exhaustive description is given, including especially valuable remarks on the differential diagnosis of the affection.

Part III. may be held to surpass both its predecessors in importance and interest. Furthermore, it is illustrated by no fewer than twelve plates—coloured, or in black and white, or photogravure. It includes monographs on Progressive Unilateral Atrophy of the Face, Chronic Progressive Bulbar Paralysis (followed by a case of Paralysis of the Lips and Tongue), Ophthalmoplegia, Molluscum Fibrosum, and Xeroderma Pigmentosum of Kaposi (1870).

In his account of progressive unilateral atrophy of the face, Dr. Byrom Bramwell makes no allusion to the earliest observations on this rare form of disease. It was first described by Romberg, of Berlin, in 1846, under the designation of a "New Form of Atrophy of the Face." To the *Archives Générales de Médecine* for May, 1852 (page 51), Dr. Ch. Lasègue contributed an interesting account of the malady. A translation of his paper, by Dr. William Daniel Moore, will be found in the fourteenth volume of the *Dublin Quarterly Journal of Medical Science*, August, 1852, page 239. It is immediately followed by an abstract of a case of progressive muscular atrophy reported by M. Gallard, clinical clerk at the "Hôpital de la Pitié;" as well as by a case of unilateral

atrophy of the face detailed by Dr. Moore himself—the patient being a gentleman aged nineteen at the time he first came under observation. It is interesting to notice that the term “trophoneurosis,” adopted by Romberg for the disease, was introduced by Dr. Schott, who selected one of Romberg’s cases for the subject of his graduation thesis in the University of Marburg, in the year 1851. The title of his thesis was: “*Atrophia singularum partium corporis, quæ sine causâ cognitâ apparet, trophoneurosis est.*”

There are, probably, no other illustrations of the skin disease described by Kaposi in 1870 under the term “xeroderma pigmentosum” which convey such an accurate idea of this rare and curious affection. It is essentially characterised by the development on those parts of the body which are usually exposed in childhood of—(1) pigmentary deposits; (2) localised atrophic patches; (3) localised vascular dilatations (telangiectases); (4) ulcerations; and (5) warts and papillomatous or epitheliomatous outgrowths.

Dr. Bramwell’s account of ophthalmoplegia is also worthy of all praise. The case he describes is that of a little girl, aged two and a half years, in whom there was no definite history of either syphilis or tubercle. The patient made a complete recovery, having taken 5-grain doses of iodide of potassium three times a day almost continuously (not “continually,” as Dr. Bramwell has it) for a year.

These few descriptive allusions to the contents of the second and third parts of the “Atlas of Clinical Medicine” will prove the exceeding value of the work, which reflects the highest credit upon its distinguished author.

Indigestion clearly Explained, Treated, and Dieted, with Special Remarks on Gout, Rheumatism, and Obesity, and Chapter on Rearing of Infants. By THOMAS DUTTON, M.D. Univ. Durh., M.R.C.S.E., &c. London: Henry Kimpton. 1892. Pp. 143.

THIS is not a book written for medical men or students; it is intended to be a popular work on indigestion, and its object is to instruct the public on this important subject. The author believes that if the public are to some extent educated as to the structure and functions of the body in which they live, and as to the nature of some of the most common diseases, together with the means of avoiding or alleviating them, they will be less prone to quackery

and various kinds of folly. In this view we agree with him; but when he supposes that the education of the public will be advanced by the little book before us, we are compelled to disagree with him.

We cannot congratulate Dr. Dutton on his book. It appears to us to be confusing and ill-arranged, and we do not think that an ordinary reader will gain much by its perusal. The directions and hints given are too vague to be of much practical use. In some respects, also, it reminds us of the novels that come out by instalments in the weekly journals—when we reach the middle of a peculiarly exciting scene we read “To be continued next week;” so with Dr. Dutton’s book, and even more so. On several occasions when we think we are coming to some important practical directions or hints, the author branches off elsewhere, and we cannot even hope to gain the critical information next week.

Some of Dr. Dutton’s facts are curious. We read that the chief function of the liver is to secrete bile; this bile is an excrementitious fluid, by which the excess of carbon and hydrogen not used up by the respiratory combustion is separated from the blood. We find nitrogenous food divided into vegetable (wheat, oats, and other cereals) and animal (meat, &c.), and saccharine or amylaceous foods find a separate place for themselves—a singular position in which to place cereals.

We do not recommend this book either to the professional or to the general reader.

The Harveian Oration on Harvey in Ancient and Modern Medicine.

By W. H. DICKENSON, M.D., F.R.C.P.; Senior Physician to St. George’s Hospital, &c. London: Longmans, Green, & Co. 1891. Pp. 34.

THE first part of this Harveian Oration is semi-historical, treating of Harvey and his times, and moralising thereon. The author fears it is commonplace. We sympathise with him in his fears. This portion of the oration reminds us forcibly of the leading articles we read day by day at our breakfast tables. That it is commonplace is due to no fault of its illustrious author. But when already 172 orations have been delivered on this theme, how could anybody approach the subject except with the sense of “sore discouragement,” which Dr. Dickenson says he felt?

In the second part, the author explains his views as to renal

dropsy. He believes that the dropsy of acute nephritis is to some extent, if not mainly, mechanical in its nature. The high arterial tension is due to obstruction; the obstruction is beyond the minute arteries of the retina and brain, as is shown by their often bursting from the pressure to which they are subjected by their contents. The obstruction must be in the capillary system, whether from change of blood *per se*, or from vascular contraction engendered by it. To overcome this obstruction the heart beats more forcibly; and with accumulating systolic force behind and stoppage in front, increased transudation would seem to be inevitable. Dr. Dickenson thinks there may be as well some secretive process on the part of the capillary walls, but that this is uncertain. The dropsy of chronic Bright's disease is, Dr. Dickenson says, cardiac as much as renal, and is due to failure of heart-power. This view as to the dropsy of chronic nephritis we have long held. The view of acute renal dropsy is more novel. We are much pleased to read Dr. Dickenson's announcement that he intends to bring it in a more expanded form before the medical public.

Age of the Domestic Animals. Being a complete Treatise on the Dentition of the Horse, Ox, Sheep, Hog, and Dog. By RUSH SHIPPEN HUIDEKORPER, M.D. Philadelphia and London: F. A. Davis. 1891. Pp. 210.

IN the treatise before us we have further evidence of the good work that is being done by those who devote themselves to the study of veterinary medicine, and now that the treatment of disease in animals is placed upon a sound scientific basis, we may look for important results from the investigations in the region of comparative pathology.

As might naturally be expected, about three-fourths of Dr. Huidekorper's book is occupied with a description of dentition of the horse—the author giving a careful account of the anatomy, periods at which the different teeth erupt, and the irregularities to which they are liable. In the chapter on cribbing, by means of three pages of illustrations, the evil effects of this vice are elucidated in a simple manner which could, with difficulty, have been done through the medium of letterpress. There is also a chapter in which the various tricks of the trade are exposed, or perhaps we ought to say the different operations which dealers practise on the teeth of horses when they wish to falsify their age.

The teeth of oxen, sheep, goats, hogs, and dogs, also receive a share of attention, the study of their teeth being simplified by what has been already said with regard to the teeth of the horse.

The last chapter in the book, devoted to a short description of the teeth of man, is interesting, as our author evidently approaches the subject from a veterinary standpoint. The determination of the age of the human animal from an examination of the teeth is, we venture to think, liable to many sources of error, and not quite such a simple matter as in a "rising three-year-old"—the periods of eruption of the "tushes" and bicuspid in man being quite as likely to vary as to agree with the times usually laid down in text-books for their appearance.

Dr. Huidekoper's work is nicely got up and profusely illustrated. Its perusal will well repay those who desire to ascertain the age of an animal from an inspection of its mouth.

A Dictionary of Treatment, or Therapeutic Index, including Medical and Surgical Therapeutics. By WILLIAM WHITLA, M.D.; Professor of Materia Medica and Therapeutics in the Queen's College, Belfast; Physician to, and Lecturer on, Clinical Medicine, Belfast Royal Hospital, &c. London: Henry Renshaw. 1892. Pp. 948.

WE have long held the opinion that in most text-books on medicine directions as to treatment are not given with sufficient detail and preciseness. For example, we read in the preface to one of the best-known and most widely-read text-books of medicine—"It seems to me best, having inculcated general principles, and pointed out the specific virtues of certain drugs, to leave the young practitioner generally as unshackled as possible with regard to his choice of particular combinations and modes of administration." While this course may have some advantages—the writer just quoted believes that the young practitioner will be more likely to become a thoughtful physician, and to benefit his patient, if he adapts his drugs and his methods to the exigencies of cases as they present themselves before him, than if he follows the stereotyped procedure of some predecessor—still it frequently leaves one rather helpless in the midst of difficulties. The present writer well remembers, when he was resident medical pupil in hospital, how difficult he found it to evolve suitable prescriptions out of bare lists of drugs given in works on medicine, and he knows that many other medical

students have been in a like situation. But the need of detailed directions as to treatment is not confined to the senior student—every medical man, no matter what his knowledge of the properties of drugs and his experience of their use may be, will be benefited by occasionally comparing his modes of treatment with those of his neighbours. It is almost impossible, especially if a doctor lives in a country-place, where he does not often meet other medical men, to avoid getting into a purely routine mode of treatment; and we believe that such a habit is highly injurious. To refer at times to the therapeutic measures employed by other men will tend to keep our own views from becoming narrow.

To all the classes of medical men to which we have referred—to students, to junior and to senior practitioners—we heartily recommend Dr. Whitla's "*Dictionary of Treatment.*" This work grew out of an attempt to append a Therapeutic Index to the author's well-known work on "*Pharmacy, Materia Medica, and Therapeutics.*" It was soon evident that a mere enumeration of the drugs suitable to the treatment of each affection would be of but little use unless the list was accompanied by some expression of opinion regarding the relative value of each drug, and of the different methods by which it might be employed. Dr. Whitla resolved to make his work as valuable as possible, and the result is the present volume of nearly 1,000 pages.

In it the various diseases and many symptoms, not diseases in themselves, but from this importance requiring special mention, are alphabetically arranged, each with full details as to treatment. Dr. Whitla generally describes his own favourite method first, and then those of other writers; but everywhere his personal opinion is apparent, pointing out advantages in this treatment, dangers in that, and so on, whereby the value of the book is much increased. The treatment is very fully given—thus, typhoid fever occupies more than 16 closely printed pages; eczema, 9 pages; piles, nearly 6; ovarian disease, 11; and these are merely examples taken at random. The treatment of surgical diseases is in some cases given more briefly, and in more general terms than that of medical affections—thus, the treatment of fractures is only described generally, and without reference to particular fractures; in other cases—*e.g.*, hernia—the article is full and detailed. The indications for the use of many of the recently introduced drugs are clearly given, and the time and mode of using operative measures—*e.g.*, tapping in pleurisy—are fully set forth. In most cases dietetic

and climatic treatment is fully described, as well as that by drugs; but in a few cases—for example, anæmia and Bright's disease—we thought the directions as to food lacked definiteness, and were somewhat incomplete.

A large number of prescriptions are given, many of which are in Latin, with the directions as to using in Latin also. We think this Latinity is a mistake; we believe it to be far more reasonable to write directions in good English than in bad Latin, which in its turn has to be translated into English by the apothecary. Besides, if Dr. Whitla had been less ambitious, and had confined himself to his native language, he would have avoided some mistakes which disfigure his pages. We do not know by what stretch of grammar "*dum effervescentia*" in the following direction, "*Capiat, ʒi. cum, ʒss. succi limonis dum effervescentia quartis horis,*" could be parsed, or could stand for "during effervescence." Is not "*horas tres postea*" (three hours after) a rather awkward phrase, instead of "*post tres horas?*" All this foreign language may be Official, but it certainly is not Latin; and the sooner the pages of excellent and valuable works cease to be disfigured with this barbarous Official language the better.

Another matter to which we object is to spoonfuls, both table, dessert, and tea—*cochlearia magna*, and *minima*. We all know how greatly one tablespoonful, for example, differs in capacity from another—our own tablespoons contain exactly one ounce each. We think it would be much better, and more conducive to exact dosage, to give doses by measure, not by spoonfuls; or else to have the bottle divided into the requisite number of portions by a mark down one side.

But these points, which we could wish altered, are, after all, very few and unimportant, and by no means lessen our very high opinion of this "*Dictionary of Treatment.*" It is clear, readable, and well up to date; the views put forward are sound and well considered. It is eminently a book to be kept on the table and frequently referred to, and we feel confident that the medical man who purchases it and uses it frequently will not regret having done so. We have nothing but admiration for Dr. Whitla's industry and perseverance—for such a work as this must have entailed enormous labour on him—and we warmly congratulate him on the success of his undertaking.

Tooth Extraction. A Manual on the Proper Mode of extracting Teeth, with a Table exhibiting the Names of all the Teeth, the Instruments required for Extraction, and the most approved Methods of using them. By JOHN GORHAM, M.R.C.S.E. Third Edition. London: H. K. Lewis. 1889. Pp. 44.

SURELY the time has come when students should no longer be allowed, with primitive instruments, to find out for themselves as best they can how teeth are to be wrenched from living human jaws. The services of a dental surgeon, to instruct and supervise students in this branch of their art, ought to be available at all our general hospitals, and in many a remote country district the doctor will be thankful for the skill and information he has acquired in this subject in his student days.

Those who have not had the advantage of special instruction, will find, if they read Mr. Gorham's manual, that in the short space of forty-four pages are condensed many valuable hints on the extraction of teeth. We earnestly commend this book to the attention of students and those practitioners who are located in regions where their services are required in all branches of surgery.

EUROPHENE.

A NEW antiseptic vouched for by an admiring multitude of surgeons as the long-sought ideal remedy is euophene, otherwise isobutylorthocresol-iodide—the reader may use either, but if in a hurry when writing his prescription the former name would occupy less time in spelling and would probably be less puzzling to the compounder. This new chemical which is to replace iodoform, iodol, aristol, phenol and all the other invaluable agents of this class is the discovery of W. Siebel, and its therapeutic value is proclaimed by von Eichhoff. It is an amorphous powder, of a yellow colour, with an odour of saffron; insoluble in water and glycerine; slightly soluble in alcohol, ether, chloroform, and oil. Dogs have taken large doses of the chemical and appeared unaffected by it, hence it is declared to be non-poisonous. Fifteen grains administered to a patient produced only the effect of heaviness or weight in the stomach. When administered internally iodine is detected in the urine. Euophene is recommended to be used as an ointment of 1 per cent. or 2 per cent. strength. A solution of it in olive oil 1 per cent. is used hypodermically for secondary and tertiary syphilis. The pure chemical applied as a powder is said to cure lupus, and the ointment is beneficial in the treatment of varicose ulcers, eczema, psoriasis and favus, if we accept the German statements.—*La Semaine Médicale*, July 25, 1891.

PART III.

SPECIAL REPORTS.

REPORT ON MATERIA MEDICA AND THERAPEUTICS.^a

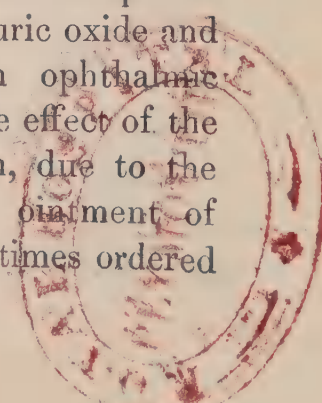
By WALTER G. SMITH, M.D. Univ. Dubl.; Physician to Sir Patrick Dun's Hospital; King's Professor of Materia Medica and Pharmacy, School of Physic, Trin. Coll. Dubl.

Saponin.—About six years ago Professor Kobert announced that commercial “saponin” was not a homogeneous compound, but, as a rule, consisted of at least four different bodies, two of which were inert while the other two were very poisonous (*Pharm. Journ.*, [3], xvi., 366). Since that time the investigation has been continued in the Pharmacological Institute at Dorpat, and the sixth part of the “Arbeiten,” recently issued, contains two exhaustive papers, by Nicolai Kruskal, upon “Some Saponin Substances” and “*Agrostemma Githago*, L.” As these papers will probably close the investigation for the present, Professor Kobert has taken the opportunity to summarise the conclusions to be drawn from the results as far as it has gone. In the first place he expresses the opinion that the idea of a saponin as described usually in the text books has no pharmacological foundation, and at most can only have a collective application. But in price lists it should be replaced by “quillaia sapotoxin,” “quillaic acid,” &c., or if the name “saponin” be retained, the drug from which it has been prepared and the method of preparation should be shortly indicated. In the so-called “saponins” the chemist apparently has to do with different series of bodies, the composition of each series being represented by a general formula. One of these formulæ, now published for the first time, is $C_nH_{2n-8}O_{10}$, and represents a series of which at least three members have been recognised. The best known of these is the “saponin” of Stutz, $C_{19}H_{30}O_{10}$. The lowest member of this

^a This Report is based upon an article by the writer in the “Year-Book of Treatment” for 1892.

series, which gave on analysis figures corresponding to $C_{17}H_{26}O_{10}$, shares this formula with the crystalline "syringin," which Körner identified as oxymethylconiferin hydrate. The amorphous substance of this composition prepared by Kruskal agrees with syringin in being a glucoside and giving a characteristic colour reaction with sulphuric acid, but whether other analogies between the two exist has not yet been determined. But one observation of the greatest interest is that it appears that several substances of this class exist which give the same results on analysis and behave similarly in all their chemical reactions, but which when tested pharmacologically show an enormous difference in the intensity of their toxic action. One of them, the "agrostemma sapotoxin," differs also physiologically from the other saponins in being absorbed by the subcutaneous tissue and by the larger intestines. This is considered to be of great hygienic importance in presence of the fact that in Russia the admixture of a certain proportion of corn cockle seed with corn is allowed upon the plea that when ground it improves the appearance of the flour. Professor Kobert considers that the continuance of this practice should be permitted only on condition of the previous removal as far as possible of the black husk and poisonous embryo.—(*Pharm. Journ.*, June 27, 1891.)

Cocaïn and Mercury Compounds.—A delicate reaction between cocaïn hydrochlorate and calomel has been observed by M. Schell (*Journ. Pharm. Els. Loth.*, Jan., p. 8). If a trace of cocaïn hydrochlorate be mixed by means of a dry glass rod with a very minute quantity of calomel, and the mixture be breathed upon, the moisture that condenses is sufficient to cause it to blacken immediately. No other alkaloid has been found to give the same reaction, but atropin and calomel acquire a similar coloration in boiling water or alcohol and water. It is curious to note, however, that in the case of atropin it occurs with the free alkaloid and not with a salt, whilst in that of cocaïn it occurs with a salt and not with the free alkaloid. Herr Bruner also has called attention to the incompatibility of some preparations for outward application, in which a cocaïn salt is ordered in conjunction with a mercurial compound (*Apot.-Zeit.*, Feb. 11, p. 86). An ointment of mercuric oxide and cocaïn hydrochlorate, for instance, is ordered in ophthalmic practice, but after being kept for a time the anodyne effect of the ointment gives place to a pronounced caustic action, due to the conversion of mercuric oxide into oxychloride. An ointment of cocaïn hydrochlorate, silver nitrate, and vaseline, sometimes ordered



as a dressing for wounds, is also liable to undergo alteration through formation of silver chloride, but it is pointed out that this change can be retarded by thoroughly mixing the solution of silver nitrate with the vaseline before adding the cocain hydrochlorate.—(*Pharm. Journ.*, 1891.)

ANTIPYRETICS.

Action of Antipyretics.—The theory as to the mode of action of antipyretics is of great practical interest. The action of antipyretics may be supposed to be due to the limitation of the oxidation processes and consequent lowering of heat development, or to an increase in the heat radiation from the surface of the body. Moreover, they may have a purely local action—*i.e.*, on the cellular tissue, or they may influence the nerve centres regulating the development or radiation of heat. Messrs. Sawodowsky and Podanowsky consider that they have proved that the lowering of temperature produced by antipyrin and antifebrin is attributable exclusively to their influence upon the brain-centres regulating the temperature, which occur in the corpus striatum (*Apot.-Zeit.*, Feb. 11, p. 87). The authors, in an experiment, cut the brain of an animal through close behind the corpus striatum and thalamus opticus, so as to isolate the organism from the heat centres, while the connection with the respiration and vaso-motor centres was retained. Although the animal so treated lived for some time and the arterial blood pressure and breathing remained unaltered, the body temperature fell continuously. Even injections of the most powerful pyretics, such as putrescent matter, caused not the slightest rise of temperature, although all the other symptoms of putrescent infection were present. The skin temperature also remained entirely unchanged, although in the case of normal animals this rises considerably after the injection of antipyretics. An apparent exception was noticed in the case of quinine hydrobromide, but this was attributed to the known action of bromine. The conclusion drawn by the authors is that the action of quinine salts, resorcin, and thallin, in lowering the temperature is dependent upon their specific influence upon the temperature-regulating centres situated in the anterior part of the brain.—(*Pharm. Journ.*, Feb. 28, 1891.)

Dr. Gottlieb points out that by calorimetric determination of the total loss of heat of an animal, at a given temperature, we can also determine the value of its heat-production. He arrives at these conclusions:—

Quinine depresses in rabbits the production of heat. The diminution in normal animals amounts to from 8 to 18 per cent.; in pyrexia induced by puncture of the brain, to 40 per cent. Simultaneously it lessens the loss of heat.

Antipyrin lowers the temperature exclusively by bringing about increased loss of heat. There is no diminution in the production of heat; *per contra*, it, in small doses, at first increases the production of heat. The rise in temperature after puncture of the brain is a regulative disturbance, and the reason why antipyretic drugs have so little effect upon healthy men and animals is the perfection of their heat-regulating mechanism.

The results of experiments upon animals agree with the clinical indications drawn at the bedside. Whenever our main object is to lower high temperature quickly, and as safely as possible, we choose a member of the antipyrin group. For long-continued antipyretic treatment, on the contrary, we give the preference to quinine.—(*Archiv. f. exp. Pathol. u. Pharm.*, xxviii., p. 167.)

Phenocoll Hydrochlorate.—This body, an ally of phenacetin, is an addition to the group of antipyretic and anti-rheumatic remedies; and has been reported upon by Dr. Hertel (*Deut. med. Wochenschr.*, April 9, 1891). It is a white powder, in small crystals, with a bitter taste, and soluble in sixteen parts of water at 62° F. According to Kobert it is not poisonous to animals, and has no deleterious effects on the blood, while von Mering found that 22 grains produced no symptoms in a rabbit, and that in pneumonia and typhus 15 grains acted as a trustworthy antipyretic, reducing temperature about 2° C., and never causing collapse or cyanosis. The amount of sweating was about the same as after large doses of antipyrin. Of phenocoll, a dose of 15 grains equals in its antipyretic action 23 to 30 grains of antipyrin, and 12 to 15 grains of phenacetin. Doses of 7 to 15 grains acted well as an antineuralgic. Hertel gave it in doses of 7 to 15 grains in cases of phthisis and rheumatism. The following is a summary of his results:—In phthisis, single doses of 7 grains lower the temperature about $\frac{1}{2}$ ° C. for a short time. Doses of 7 grains given hourly for three hours reduce the temperature about 1° C., but not with certainty; the reduction lasts only a short time. Doses of 15 grains cause reduction of temperature, 1° to 1 $\frac{1}{2}$ ° C. in a few hours, the reduction generally lasting about two hours. Seventy-five grains given during twenty-four hours generally keep the temperature normal. The subsequent rise of temperature is regular, and unaccompanied by rigors or sweating. In

acute rheumatism the same dose keeps the patient free from pain, but scarcely reduces the temperature, which only falls when the joint affections improve. It has no effect in gonorrhœal rheumatism. The urine, after about 75 grains have been taken, becomes brownish-red or dark brown in colour, becoming deeper-coloured on exposure to the air. On adding solution of perchloride of iron, a dark colour is produced, which clears up somewhat with strong sulphuric acid, but does not disappear entirely, and by transmitted light shows a peculiar greenish colour. Phenocoll is excreted very quickly, as this reaction is not obtained for more than about twelve hours after the last dose. No disturbance of the heart, respiration, or digestion was ever observed. It should not be kept in watery solution, as it decomposes slowly. Hertel states that he was very favourably impressed with the general results of its use, and advises further observations.—(*Brit. Med. Journal*, Suppl., May 2, 1891.)

Phenacetin in Influenza.—Dr. Clemow (*Brit. Med. Journal*, June 27, 1891) fully corroborates the testimony of other observers as to the excellent effects of phenacetin in epidemic influenza. He usually gives 5 to 10 grains, either in cachets or suspended in milk, to be repeated in an hour if the pains are not fully relieved, and then every four hours until further directions. He is fully convinced of the superiority of this drug over antipyrin and salicin, and has met with no bad symptoms from its use. The greater rapidity with which the pains are relieved is very striking, and phenacetin takes rank as one of the most valuable analgesics.

ANTISEPTICS.

Benzoate of β -naphthol.—The insolubility of the higher aromatic compounds has till recently been a great obstacle to their study as antiseptics. The naphthols, especially naphthol β , have been for some time administered as intestinal antiseptics, but it was soon found that a compound of naphthol β with salicylic acid, introduced under the name of bethol, was more efficient. This substance varied considerably in composition, and was also inadmissible when on account of renal disease salicylic acid was contra-indicated.

MM. Yvon and Berlioz have prepared a benzoate of naphthol, which is soluble in alcohol or chloroform, feebly soluble in water or ether. This compound, when introduced into the intestine, breaks up into naphthol β (which remains in the intestine) and benzoic acid, which is eliminated by the kidneys in the form of alkaline salts and alkaline hippurates—(1) It is very slightly poisonous;

(2) it is an antiseptic as powerful as its congeners; (3) it encourages diuresis, the absorbed portion being rapidly eliminated by the urine; and (4) it can be given in large doses, but it is advised to give small and frequently-repeated doses rather than single large quantities. More than a drachm daily has been administered to an adult. (*Brit. Med. Journal*, Suppl., Nov. 7, 1891.)

Dr. F. W. Burton, in a paper on Putrefactive Decomposition in the Intestinal Tract (*Brit. Med. Journal*, April 4, 1891), cites several cases of typhoid fever and of tuberculous ulceration of the bowel, in which β naphthol was given with marked benefit—2 to 8 grains every few hours. It checked the diarrhoea and lessened the offensive odour of the stools.

Iodphenin is formed by treating with iodine phenacetin, to which some hydrochloric acid has been added. It can be obtained in steel-blue crystals, and is almost insoluble in water, but soluble in alcohol. Herr Scholvien brought iodphenin before the Berlin Pharmaceutical Society as a compound possessing extraordinary germicide properties. It is claimed that five minutes' contact with a 1 in 5,000 solution of iodphenin renders *Staphylococcus aureus* incapable of further developing.—(*Pharm. Journal*, May 30, 1891, from *Apot. Zeit.*)

Sulphite of Zinc.—Twenty years ago, in a paper read before the British Pharmaceutical Conference at Liverpool, Professor Tichborne called attention to the possible value of zinc sulphite as an antiseptic (*Pharm. Journal*, [3] i., 351). Recently he has again suggested it as a material for the preparation of antiseptic dressings, and Dr. Heuston (Adelaide Hospital, Dublin) reports that for this purpose he has found it superior to sal alembroth, it being non-poisonous, non-irritative, and highly antiseptic (*Brit. Med. Journal*, Nov. 8, p. 1064). Professor Tichborne states that zinc sulphite is best prepared by mixing in solution six parts of zinc sulphate and five and a quarter parts of sodium sulphite. The reaction takes place slowly, but goes on to completion, the new salt, which forms as a white crystalline precipitate, being very insoluble in water, though soluble in excess of sulphurous acid. Dried at 100° C., it has the composition represented by the formula $\text{ZnSO}_3 \cdot 2\text{H}_2\text{O}$, but if only dried at the ordinary temperature it contains another molecule of water. In contact with water it undergoes a slow but regular oxidation, which in an experiment with a saturated solution was complete on the eighteenth day. Zinc sulphite can be used for the saturation of any fabric, such as gauze or lint, without the

intervention of an adhesive material. The fabric is first boiled with water, to cleanse and sterilise it, after which a boiling solution of zinc sulphate and sodium sulphite in equivalent proportions is poured upon it, and when thoroughly mixed and saturated, the whole is allowed to stand for twelve hours. The zinc sulphite is said to be deposited in and about the fibres of the fabric in microscopic crystals, soft and even unctuous to the touch. The fabric is then passed under rollers submerged in water to remove traces of sodium sulphate. It is suggested that this kind of dressing might be dyed with an organic pigment to distinguish it from others, and for the purpose of indicating the progress of the discharges by the action of liberated sulphurous acid on the colour.—(*Pharm. Journal*, Nov. 20, 1890.)

Creolin.—A number of instances are on record in contravention of the asserted non-poisonous qualities of creolin. Some important evidence as to the action of creolin on the human subject may be gathered from a thesis on that compound published at Breslau during the course of this year. Dr. Bitter, the author, notes that creolin has already been used in more than 2,000 midwifery cases at Breslau. As appears to be the case with nearly every new compound of the kind, the results, according to Drs. Born and Bitter are most encouraging. In four of the midwifery cases, however, symptoms of poisoning occurred during the administration of a course of creolin injections. Three of the patients were suddenly seized with feelings of restlessness, anxiety, nausea, darkness before the eyes, and a tendency to syncope. The most peculiar feature in these cases was a strong flavour of tea or smoke in the mouth, of which all the patients complained. This symptom lasted for a long time, whilst the nausea, &c., disappeared immediately upon the discontinuance of the vaginal injections of creolin. The fourth case was more severe; the patient suffered from great restlessness and prostration for several days after the injections were left off. About thirty-six hours after the beginning of the attack the urine, drawn off with the catheter, was very dark and strongly albuminous. Within a few days these symptoms of acute nephritis disappeared. Dr. Bitter advocates creolin as superior to other disinfectants on account of its “relatively” (*sic*) non-poisonous qualities, its excellence as a deodoriser, and its blandness when applied to skin, mucous membranes, and wounds. It neither dries the vaginal mucosa nor causes any contraction of the canal. Creolin has no special hæmostatic action. Dr. Bitter finds that there are dis-

advantages in creolin, as the emulsions employed for injections are opaque, and the preparation of creolin usually on sale appears to be unstable.—(*Brit. Med. Journal*, Dec. 13, 1890.)

Hydro-naphthol has been before the profession for some time, but its powers as a germicide are differently estimated by different observers.

Dr. T. H. Bryce (*Brit. Med. Journal*, Nov. 22, 1890) has investigated its action in the Bacteriological Laboratory, Glasgow. His experiments were all made upon one organism, *Staphylococcus pyogenes aureus*, and with a solution of hydro-naphthol in rectified spirit and glycerine. The pure drug is insoluble in water, and this is undoubtedly a disadvantage. He concludes that, when dissolved as above, it is a powerful antiseptic agent, in a strength of 1 in 400.

The standard solution 1 in 100 is thus made:—

Hydro-naphthol	...	...	...	1 part	} 1 part
Rectified spirit	...	...	...	10 parts	
Glycerine	...	...	...	...	9 parts

Aristol, a proposed substitute for iodoform, does not appear to have attracted much attention. The contradictory experiences that have been reported may, perhaps, be partly explicable by variation in its quality. Herr Reuter finds that some specimens of aristol (= dithymol diniodide) contain alkaline iodide and free iodine. But the question arises whether an absolutely pure preparation is advantageous, for it would seem that pure aristol is so stable that it would be less likely to act as a bactericide than a preparation rendered unstable by the presence of more or less free iodine or alkaline iodide.—(*Pharm. Journal*, from *Apot. Zeit.*, Jan. 28, 1891; cf. Pollak, *Therap. Monatsch.*, December, 1890.)

Apomorphin and Apocodein.—Dr. Murrell (*Brit. Med. Journal*, Feb. 28, 1891) has made some interesting observations upon the value of these drugs as expectorants in the treatment of chronic bronchitis. Apomorphin can be given by the mouth in comparatively large doses ($1\frac{1}{2}$ to 2 grains three times a day), without exciting vomiting or inconvenience. It may be applied successfully in the form of ointment ($\frac{1}{3}$ gr. to 3 i.), and is invaluable in the bronchitis of children.

A neutral solution of apocodein can be injected hypodermically ($\frac{1}{3}$ grain) without causing local irritation. It rarely produces nausea or vomiting, and is an effective expectorant. From 3 to 4 grains may be administered daily with perfect safety.

Diuretin has attracted some attention. It is now generally understood to be merely a mixture of theobromine-sodium and sodium salicylate. It is very unstable, and is decomposed by all acids, even by the CO_2 of the atmosphere.—(*Lambert*.)

Dr. Geisler speaks well of the drug, and states that it raises the blood pressure (*Berlin klin. Wochensch.*, April, 1891), while Dr. Drozdovsky, of St. Petersburg, sums up by saying that diuretin (a) has no influence on the heart, (b) it is very unreliable as a diuretic agent, and (c) cannot advantageously be used as a substitute for digitalis, adonis, strophanthus, and other allied remedies.—(*Brit. Med. Journal*, Oct. 10, 1891.)

The dose of diuretin required is large—viz., 5 to 7 grammes a day. The drug is expensive, and, upon the whole, its claim for recognition does not appear to be a strong one.

Sulphonal.—Dr. Stewart, of Philadelphia, states that sleep can be readily induced by sulphonal, *within a few minutes*, by the simple expedient of dissolving the dose of sulphonal in about 6 fl. oz. of boiling water, the patient taking the liquid as hot as can be borne.—(*Braithwaite's Retrospect*, from *Philad. Med. News*, Jan. 1, 1891.)

Cantharidin in Phthisis.—In view of the conflicting statements that have been made as to the preparation and dose of the liquid used by Dr. Liebreich in the treatment of tuberculosis under the name “cantharidinate of potash,” it may be convenient to put on record what is understood to be the exact formula, which has been kindly communicated by Dr. Schacht, of Berlin. In preparing the liquid 0.2 gram of cantharidin and 0.4 gram of potassium hydrate (or 0.3 gram of sodium hydrate) are weighed with great exactness, and heated in a flask of one litre capacity on a water-bath with about 20 c.c. of water, until a clear solution results. Water is then added quite gradually, while the heat is continued, until the mark is nearly reached, and then after cooling the whole is made up exactly to one litre with water. A litre of the liquid, therefore, contains 2 decigrams of cantharidin, and each cubic centimetre contains one-tenth of a milligram.—(*Pharm. Journal*, March 28, 1891.)

This drug is not, as in the case of “tuberculin,” open to the imputation of being a secret remedy. It, however, is liable to induce toxic symptoms, and the reports in the literature of the past year, when put together, give little encouragement for its employment in the treatment of tuberculosis. (Cf. *Brit. Med. Journal*, May 9, 23, 30, 1891.)

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—GEORGE H. KIDD, M.D., F.R.C.S.I.

General Secretary—W. THOMSON, F.R.C.S.I.

SECTION OF OBSTETRICS.

President—ANDREW J. HORNE, F.R.C.P.I.

Sectional Secretary—F. W. KIDD, M.D.

Friday, January 8, 1892.

Dr. SMYLY in the Chair.

Anæsthetics : a Clinical Study.

DR. DUDLEY BUXTON, of London, gave an Address on the above subject. He pointed out that although anæsthetics had been applied to surgery for nearly half a century yet with the exception of a few monographs such as those of Snow, Bernard, and some few others, but imperfect attempts had been made to treat the subject from the clinical standpoint. Passing the literature of the subject under review he pointed out that the various Commissions and investigations which had been carried out in the past had conflicted in their findings, so that although some had claimed to have settled the various *questiones vexatæ*, yet really no definite conclusions could rationally be accepted, because while the experiments undertaken by different observers do not give uniform results, the observers themselves were so well known as careful and skilled experimenters that it was impossible to accept the evidence of one side rather than that of another. This being so, he urged that the time had come for the profession itself to take up the matter, and to collect from their hospital and private practice a reliable record of the action of anæsthetics upon human beings. The present occasion afforded a favourable opportunity for this, as a committee had been formed by the British Medical Association for the very purpose of initiating an exhaustive inquiry into the action of

anæsthetics. He then pointed out the various sources of information from which evidence might be collected, viz., from *post mortem* reports upon cases of deaths under anæsthetics; from the symptoms of cases in which more or less difficulty had arisen during the course of administration of an anæsthetic; and lastly, from cases in which the phenomena of the normal induction of anæsthesia presented themselves. He then described the *post mortem* appearances which had been described, and showed in what way their evidence could be relied upon and how far it must be accepted with caution. He further entered in detail upon the evidence which could be obtained from cases when unusual phenomena presented themselves, and showed the lines along which the investigations should travel. He indicated, for example, how a mere insufficiency of inspiration might arise from very various causes, and so that the inquiry into this particular complication would have to enter most carefully into the very various causes of it, and added that the practical bearings of the matter were well shown by this example, as upon the correct explanation of the symptoms seen must rest the choice of the method of treatment employed and upon that hung the chance of the patient's life being saved. He then considered *seriatim* the points which were involved in the headings under which the inquiry was seeking information, viz.—age, sex, race, time of day when the anæsthetic was taken, the manner in which it was given, the source and purity of the drug, and the after effects observed. These could all be grouped under three headings—namely, (1) those affected by the individual patient; (2) those affected by the nature of operation; and (3) those affected by the chemical nature and reaction of the anæsthetic, *e.g.*, its purity, the changes it had undergone by the action of the air or sunlight, or that of illuminating gas. A thorough investigation of these sources of information could not fail to result in a vast increase in our knowledge of the action, dangers, and complications of anæsthetics, and would, he thought, teach the whole profession much that was valuable and much that could not but prove of great use to humanity at large. Under these three headings were then passed in review, by the speaker, all the phenomena as met with during the use of ether, chloroform, nitrous oxide, and their bearing upon the various questions at issue.

The PRESIDENT of the Royal College of Surgeons said he was asked by Dr. Childs, of Weymouth, to form a committee in Ireland in connection with the Anæsthetic Committee, and he hoped to do so as soon as possible. The President hoped the President of the Royal College of Physicians, and Fellows and Members of his College, would co-operate. Also the Dublin Branch of the British Medical Association, and the Royal Academy of Medicine, the Infirmaries, and Workhouses, and Dispensaries. In fact, the anæsthetic question is one of vital importance to every member of the profession, no matter where located, and also to each

individual who takes an anæsthetic. He also drew attention to the greater risk attendant on the administration of anæsthetics in cases of minor operations—and reductions of dislocations than in major operations. He was thankful to say he never was present at a death from an anæsthetic, but saw several “touch-and-go cases.” He confessed he was always more afraid of the anæsthetic than the operation.

MR. ORMSBY stated he hoped something definite might come from this commission, but he greatly feared if the commission was not put in the hands of an experienced committee, with two local hon. secretaries, who had specially investigated the subject of anæsthetics, and who would really take trouble about the matter, very little good would be done. As an operating surgeon he always feared the anæsthetic far more than the operation, and he considered that if the investigation was carried out in a thorough manner, it would prove a valuable record. As the paper did not allow any discussion on the relative safety of one anæsthetic over another, he would conclude his remarks by congratulating Dr. Dudley Buxton on his very able and practical paper.

MR. THOMSON was of opinion that much good would result from the work of the committee which it was proposed to appoint. He agreed in the importance of instruction in the methods of administering anæsthetics, all of which had dangers; and he was afraid that everywhere the profession had failed in its duty in this respect. The paper did not permit any discussion on the merits of various anæsthetics, but as to the causes which were supposed to lead to death. He thought there was to be added the influence of fright which was produced by the publication in the ordinary newspapers of reports of deaths from anæsthetics.

DR. HARLEY.—I fear there has been a panic about anæsthetics displayed here to-night quite uncalled for, and I was sorry to hear the President of the College of Surgeons state that he approached an operation with more fear of the anæsthetic than of the operation. I have given anæsthetics frequently for the late Mr. Butcher, Mr. Wheeler, and other surgeons, also for obstetric surgeons, and have had patients anæsthetised for from an hour and a half to two hours, and for Emmet's operation, Hagar's dilatation, and such others, besides many capital operations, and I am happy to say the operating surgeon never had any anxiety about the patient. I have never seen a death from anæsthetics, nor have I ever been frightened about a patient. I have never even had a case of what Mr. Croly calls “touch-and-go.” I have been twenty years practising, and have never heard of more than two or three deaths in all that time from an anæsthetic. In private practice I certainly always devote my whole attention to my own duty, and never think of the operation.

MR. FOX.—Dr. Buxton's paper gives very little scope for the discussion of the method of administration of anæsthetics. As regards the relative

values of chloroform and ether as anæsthetics, we are precluded from discussing it. The author has stated that deaths from chloroform were still increasing, but he does not mention that the percentage of deaths is less. Outside London, with the exception of New England States of America, chloroform is the favourite anæsthetic. The risk referred to as due to emphysema, might be avoided by inhalation of oxygen. The advocacy of certification cannot be approved of; there are too many certificates. What is required is sound clinical and theoretical teaching on the subject, and a searching examination of candidates on their risks. Climate and race cannot have any effect other than the slightest on chloroform. It is used by Semites in India and Aryans in Scotland with equal success.

SIR WILLIAM STOKES fully endorsed the opinions expressed by the preceding speakers as regards the importance of the communication of Dr. Dudley Buxton, and thought that it was of the utmost importance that the administration of anæsthetics should not be entrusted to inexperienced persons, and also to the necessity of employing pure anæsthetics. He, however, expressed some disappointment that a sufficiently definite line of investigation was not indicated by Dr. Buxton in the proposed inquiry, and feared that if the results of the labours of the Committee about to be formed were to be nothing but a record of cases to which anæsthetics had been administered, the statistics would not be attended with better results than those of the collective investigation of disease which were eminently unsatisfactory.

DR. MYLES was of opinion that the method proposed was simply a collective investigation committee; that the results, as in similar cases before, would be merely a certain amount of temporary notoriety for the leaders of the movement. Dr. Myles further pointed out that very little reliance could be placed on the observations of untrained men, and that the experimental method was the only one from which reliable deductions could be drawn.

MR. F. A. NIXON.—I must take exception to the statements which have been made to-night:—1st. That the Profession in Dublin are in any way careless in the administration of anæsthetics. This is a grave reflection upon them, and I may say for myself, that the duty of giving an anæsthetic is always to me a subject of great anxiety, and one which occupies my *entire* attention. 2nd. That those who administer anæsthetics are ignorant, inexperienced, and do so without any instruction on the subject. This is, indeed, a grave reflection on the clinical teaching of the Dublin School. I wish, again, to say for myself, that it has always been my practice to carefully instruct students in the administration of the anæsthetic before and during its administration; to draw their attention especially to the condition of the respiration, the pupil, the pulse, the appearance of the face, &c., and this I consider to be one of the most

important duties of every clinical teacher, which I regret to hear to-night has been so much neglected.

DR. DUDLEY BUXTON then replied.

SECTION OF ANATOMY AND PHYSIOLOGY.

President—HUMPHREY J. BROOMFIELD, F.R.C.S.I.

Sectional Secretary—A. BIRMINGHAM, M.B.

Friday, January 15, 1892.

DR. BROOKS in the Chair.

Exhibits.

I. PROFESSOR FRASER exhibited a beautiful collection of photographic enlargements of serial sections of embryos, and of brains. He explained how they were made, and pointed out the great advantages of using this method of reproducing such sections, as contrasted with old methods of copying with the camera lucida.

The CHAIRMAN complimented Professor Fraser on his work, and suggested the advisability of supplying with such reproductions, line-tracings, which would bring the important point of the sections more clearly before the untrained eye.

PROF. FRASER, in reply, agreed with the Chairman, and explained how such tracings might be simply and quickly produced with the aid of photography.

II. PROFESSOR BIRMINGHAM exhibited a specimen in which the transverse ligament of the atlas was ossified, except at the extremities, which still remained fibrous at the attachments to the bone. The odontoid process might be rotated freely within its ring.

The CHAIRMAN asked some questions about the specimen, to which Prof. Birmingham replied.

Papers.

I. DR. ROBERT H. WOODS read a paper on a few applications of a physical theorem to membranes in the human body in a state of tension.

The theorem was that if P be the pressure of fluid contained in a membrane curved circularly in two directions at right angles to one another, and if r_1 and r_2 be the two radii of curvatures and T the tension at a given point,

$$\text{Then—} P \propto T \left(\frac{1}{r_1} + \frac{1}{r_2} \right)$$

This theorem, when applied to the heart, shows that the tension in the walls is not the same for different points on the heart wall, nor can it be

constant for the same point in different stages of contraction, on account of the variation in the radii of curvature, but will be greater according as the curvature is more gradual and the heart more dilated. The organ, then, will have to make a greater effort at the beginning than towards the end of systole. But the heart wall is thinnest when most dilated; hence we have the two factors contributing towards the difficulty of commencing systole. The paper went on to show that this difficulty is, in part at least, got over by the columnæ carneæ and musculi papillares which cross the cavity of the heart, and thus act more directly on its wall, as well as economising space.

An example was taken from the pathological condition known as prostatic bladder. The ridging on the interior of the bladder was an attempt to form columnæ carneæ of its own for the purpose of raising the pressure of the urine with the view of overcoming the resistance to its outflow.

The same theorem, when applied to the uterus, explains the reason why an abnormally great collection of liquor amnii renders the organ almost powerless in expelling the fœtus, and also explains why letting a quantity of liq. amnii escape facilitates its expulsion.

The author exhibited some specimens of hearts hardened under moderate interventricular pressure, and proved that if the thickness of the wall at different points be substituted for the tension (to which it may be taken as proportional), the formula

$$T \left(\frac{1}{r_1} + \frac{1}{r} \right)$$

is constant, or that the thickness of the heart at any point bore a definite relation to the curvature at that point.

The want of a tendency to heal in varicose veins was also explained in a similar way, for the more dilated the vein the higher the tension in its walls and the less availed any effort it could make at contracting to its normal size.

The author also deduced that in an adult heart the pressure in the left ventricle is about six and a half times that of the right. There is reason to believe that the pressure in the left ventricle is a little over nine feet of water; that in the right would, on this assumption, be equal to a head of 17 inches of water.

The CHAIRMAN congratulated Dr. Woods on his able paper. He was glad to hear his conclusions as to the use of the musculi papillares and columnæ carneæ, with which he agreed.

PROFESSOR FRASER doubted the applicability of such precise mathematical rules to structure in animal bodies. He would like to know if Dr. Woods' conclusions might be applied to all hearts.

PROFESSOR BIRMINGHAM complimented Dr. Woods upon the production of such an interesting paper. Applying these conclusions to the heart of

man, he would like to hear from Dr. Woods how he accounted for the distribution of the columnæ carneæ on the interventricular septum. In the left ventricle, above, where the curvature is most open, the columnæ carneæ are almost absent, while they are numerous below, where the curve is reduced. On the right side of the septum, which is convex, the columns are much better developed. Professor Birmingham also referred to an old theory of the use of the columnæ carneæ—namely, that by whipping the blood, they caused it to give off its gas more readily, as when flat soda-water is whipped up, it gives a renewed discharge of gas. He much preferred Dr. Woods' scientific explanation.

In reply, DR. WOODS was of opinion that his theorem and conclusion might be applied to all hearts. He thought the soda-water explanation of the function of the columnæ carneæ could not be entertained, as the gases were not given off in the ventricle, and further, were not in true solution in the blood; and that the reason why stirring flat soda-water evolved more gas, was that it was shown the example by the gas adhering to the rod.

Irregular Nerve Supply to the Dorsum of the Foot.

DR. P. J. FAGAN read a note of an irregular nerve supply to the dorsum of the foot. The external saphenous supplied the outer three and a half toes. The internal saphenous ran along the inner side of the great toe to its tip. The musculo cutaneous sent one branch to the inner side of the great toe, and another to anastomose with the external saphenous. The anterior tibial divided into two branches; one supplied the contiguous sides of the great and second toe, and the other ran to the dorsum of the third. Such a condition was not reported amongst the 229 feet examined during the collective investigation of the Anatomical Society last year.

The CHAIRMAN discussed the communication at some length. He referred to the abnormal arrangement of the anterior tibial, and he compared it to the condition which he had found in certain lizards. He had never seen an internal saphenous with such an extensive distribution.

The Section then adjourned.

COCAIN.

M. MAGITOT (*Journal de Pharmacie et de Chimie*) writes:—Cocain should not be employed as an anæsthetic in cases of cardiac, respiratory, or nerve troubles. Cocain should be deeply injected instead of subcutaneously, care being taken to avoid intra-venous injection. Cocain should be administered to the patient when he is lying down. Cocain should be administered *fractionally* to allow of toxic symptoms being watched.—*Répertoire de Pharmacie*, No. 8, 1891.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, B.A., M.D., Univ. Dubl.; F.R.C.P.I.;
F. R. Met. Soc.; Diplomate in State Medicine and ex-Sch. Trin. Coll. Dubl.

VITAL STATISTICS

For four Weeks ending Saturday, January 2, 1892.

The deaths registered in each of the four weeks in the sixteen principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000:—

TOWNS	Weeks ending				TOWNS	Weeks ending			
	Dec. 12.	Dec. 19.	Dec. 26.	Jan. 2.		Dec. 12.	Dec. 19.	Dec. 26.	Jan. 2.
Armagh -	31·5	12·6	44·1	51·6	Limerick -	29·4	21·0	15·4	29·4
Belfast -	42·2	43·8	35·5	37·7	Lisburn -	17·2	21·5	38·7	73·1
Cork -	56·0	57·4	47·6	60·2	Londonderry	24·0	20·8	8·0	19·2
Drogheda	39·6	17·6	8·8	44·0	Lurgan -	27·6	46·0	32·2	50·6
Dublin -	24·5	32·6	28·2	43·8	Newry -	11·7	27·3	11·7	27·3
Dundalk -	23·4	27·3	7·8	11·7	Sligo -	10·4	5·2	10·4	10·4
Galway -	30·4	6·7	3·8	49·4	Waterford -	19·2	24·0	21·6	26·4
Kilkenny	51·7	32·9	0·0	37·6	Wexford -	22·5	45·0	40·5	31·5

In the week ending Saturday, December 12, 1891, the mortality in twenty-eight large English towns, including London (in which the rate was 18·1), was equal to an average annual death-rate of 19·8 per 1,000 persons living. The average rate for eight principal towns of Scotland was 30·6 per 1,000. In Glasgow the rate was 26·2, and in Edinburgh it was 45·3.

The average annual death-rate represented by the deaths registered during the week in the sixteen principal town districts of Ireland was 32·5 per 1,000 of the population (unrevised) according to the recent Census.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 2·3 per 1,000, the rates varying from 0·0 in ten of the districts to 4·7 in Kilkenny—the 11 deaths from all causes registered in that district comprising 1 from whooping-cough. Among the 207 deaths from all causes registered in Belfast are 3 from measles, 1 from typhus, 6 from whooping-cough, 4 from enteric fever, 3 from

diarrhœa, 20 from phthisis, and 81 from diseases of the respiratory system. The 80 deaths in Cork comprise 2 from whooping-cough, 1 from enteric fever, 4 from phthisis, and 43 from diseases of the respiratory system. The Assistant-Registrar of No. 4 District, Belfast, specially reports 8 deaths from influenza, and the Registrar of No. 5 District reports 2 deaths from the same disease.

In the Dublin Registration District the registered births amounted to 154—96 boys and 58 girls; and the registered deaths to 168—88 males and 80 females.

The deaths, which are 39 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 25·2 in every 1,000 of the estimated population. Omitting the deaths (numbering 5) of persons admitted into public institutions from localities outside the district, the rate was 24·5 per 1,000. During the forty-nine weeks of the year, ending with Saturday, December 12, the death-rate averaged 25·6, and was 1·6 under the mean rate in the corresponding period of the ten years 1881–1890.

Twenty-five deaths from zymotic diseases were registered, being 1 in excess of the average for the corresponding week of the last ten years and 3 over the number for the week ended December 5. They comprise 3 from influenza (including 2 cases in which the disease was complicated with bronchitis), 3 from whooping-cough, 11 from enteric fever, 3 from diarrhœa, 2 from dysentery, and 1 from erysipelas.

The number of cases of enteric fever admitted to hospital is 23, being 6 under the admissions for the preceding week, but 3 over the number for the week ended November 28. Thirty-five enteric fever patients were discharged, 4 died, and 133 remained under treatment on Saturday, being 16 under the number in hospital at the close of the preceding week.

The hospital admissions for the week include also 2 cases of measles, but no cases of scarlatina or typhus were received. Eight cases of measles, 5 of scarlatina, and 2 of typhus, remained under treatment in hospital on Saturday.

The number of deaths from diseases of the respiratory system registered is 50, being equal to the average for the corresponding week of the last ten years, but 29 under the number for the week ended December 5. The 50 deaths consist of 31 from bronchitis and 19 from pneumonia or inflammation of the lungs.

In the week ending Saturday, December 19, the mortality in twenty-eight large English towns, including London (in which the rate was 17·8), was equal to an average annual death-rate of 19·1 per 1,000 persons living. The average rate for eight principal towns of Scotland was 26·0 per 1,000. In Glasgow the rate was 24·6, and in Edinburgh it was 26·8.

The average annual death-rate in the sixteen principal town districts of Ireland was 35·7 per 1,000 of the population (unrevised) according to the recent Census.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 2·2 per 1,000, the rates varying from 0·0 in ten of the districts to 9·2 in Lurgan—the ten deaths from all causes registered in that district comprising 2 from whooping-cough. Among the 215 deaths from all causes registered in Belfast are 2 from measles, 1 from typhus, 6 from whooping-cough, 1 from diphtheria, 3 from enteric fever, 3 from diarrhœa, 16 from phthisis, and 93 from diseases of the respiratory system. The 82 deaths in Cork comprise 3 from whooping-cough, 1 from enteric fever, 12 from phthisis, and 38 from diseases of the respiratory system. The Assistant-Registrar of Belfast No. 4 District specially reports 4, and the Registrar of No. 5 District 3 deaths from influenza and its complications.

In the Dublin Registration District the registered births amounted to 234—114 boys and 120 girls; and the registered deaths to 226—112 males and 114 females.

The deaths, which are 13 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 33·9 in every 1,000 of the population. Omitting the deaths (numbering 9) of persons admitted into public institutions from localities outside the district, the rate was 32·6 per 1,000. During the fifty weeks of the year, ending with Saturday, December 19, the death-rate averaged 25·7, and was 1·6 under the mean rate in the corresponding period of the ten years 1881–1890.

Twenty-nine deaths from zymotic diseases were registered, being 4 over the average for the corresponding week of the last ten years, and also 4 over the number for the week ended December 12. They comprise 8 from influenza and its complications, 4 from whooping-cough, 7 from enteric fever, 5 from diarrhœa, and 1 from dysentery.

Twenty-four cases of enteric fever were admitted to hospital, being 1 over the admissions for the preceding week, but 5 under the number for the week ended December 5. Forty enteric fever patients were discharged, 3 died, and 114 remained under treatment on Saturday, being 19 under the number in hospital at the close of the preceding week.

The hospital admissions for the week include, also, 3 cases of measles, 4 of scarlatina, and 1 case of typhus. Five cases of measles, 8 of scarlatina, and 1 case of typhus remained under treatment in hospital on Saturday.

Seventy-two deaths from diseases of the respiratory system were registered, being 17 in excess of the average for the corresponding week of the last ten years, and 22 over the number for the week ended December 12, which, however, was 29 under that for the week ended

December 5. The 72 deaths comprise 51 from bronchitis, and 18 from pneumonia or inflammation of the lungs.

In the week ending Saturday, December 26, the mortality in twenty-eight large English towns, including London (in which the rate was 21·8), was equal to an average annual death-rate of 22·8 per 1,000 persons living. The average rate for eight principal towns of Scotland was 27·1 per 1,000. In Glasgow the rate was 27·0, and in Edinburgh it was 25·4.

The average annual death-rate represented by the deaths registered in the sixteen principal town districts of Ireland was 29·2 per 1,000 of the unrevised population, based on the Census of 1891.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 1·9 per 1,000, the rates varying from 0·0 in twelve of the districts to 3·9 in Newry—the 3 deaths from all causes registered in that district comprising 1 from whooping-cough. Among the 174 deaths from all causes registered in Belfast are 1 from typhus, 8 from whooping-cough, 1 from diphtheria, 4 from diarrhoea, 24 from phthisis, and 84 from diseases of the respiratory system. The 68 deaths in Cork comprise 1 from whooping-cough, 2 from diphtheria, 10 from phthisis, and 32 from diseases of the respiratory system. The Assistant-Registrar of Belfast No. 4 District specially reports 2 deaths from influenza.

In the Dublin Registration District the registered births amounted to 134—81 boys and 53 girls; and the registered deaths to 194—99 males and 95 females.

The deaths, which are 19 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 29·1 in every 1,000 of the population. Omitting the deaths (numbering 6) of persons admitted into public institutions from localities outside the district, the rate was 28·2 per 1,000. During the fifty-one weeks of the year, ending with Saturday, December 26, the death-rate averaged 25·8, and was 1·6 under the mean rate in the corresponding period of the ten years 1881–1890.

The number of deaths from zymotic diseases registered is 25, being 2 over the average for the corresponding week of the last ten years, but 4 under the number for the week ended December 19. The 25 deaths comprise 1 from typhus, 5 from influenza and its complications, 5 from whooping-cough, 8 from enteric fever, 1 from diarrhoea, 1 from dysentery, and 1 from erysipelas.

The number of cases of enteric fever admitted to hospital is 20, being a decline of 4 as compared with the admissions for the preceding week. Twelve enteric fever patients were discharged, 3 died, and 119 remained under treatment on Saturday, being 5 over the number in hospital at the close of the preceding week.

The hospital admissions for the week include, also, 1 case of measles, 3 cases of scarlatina, and 4 of typhus, against 3 cases of measles, 4 of scarlatina, and 1 of typhus admitted during the preceding week. Five cases of measles, 11 of scarlatina, and 4 of typhus remained under treatment in hospital on Saturday.

Deaths from diseases of the respiratory system, which had risen from 55 for the week ended December 12, to 72 for the following week, fell this week to 52, but this number is one over the average for the 51st week of the last ten years. The 52 deaths comprise 40 from bronchitis and 9 from pneumonia or inflammation of the lungs.

In the week ending Saturday, January 2, 1892, the mortality in twenty-eight large English towns, including London (in which the rate was 41·9), was equal to an average annual death-rate of 37·4 per 1,000 persons living. The average rate for eight principal towns of Scotland was 26·0 per 1,000. In Glasgow the rate was 29·3, and in Edinburgh it was 22·8.

The average annual death-rate in the sixteen principal town districts of Ireland was 40·9 per 1,000 of the population (unrevised) according to the recent Census.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 3·1 per 1,000, the rates varying from 0·0 in seven of the districts to 9·4 in Kilkenny—the 8 deaths from all causes registered in that district comprising 1 from typhus and 1 from whooping-cough. Among the 185 deaths from all causes registered in Belfast are 1 from measles, 2 from scarlatina, 1 from typhus, 7 from whooping-cough, 3 from diphtheria, 2 from enteric fever, 2 from diarrhoea, 23 from phthisis, and 72 from diseases of the respiratory system. Among the 86 deaths in Cork are 1 from whooping-cough, 1 from enteric fever, 3 from diarrhoea, 14 from phthisis, and 25 from diseases of the respiratory system. The 17 deaths in Lisburn comprise 1 from enteric fever and 1 from diarrhoea. The Registrar of Belfast No. 5 District specially reports 1 death from influenza. In Dundalk 1 death and in Lisburn 2 deaths were recorded from influenza. The Assistant-Registrar of Dundalk remarks that “influenza is very prevalent in the district.”

In the Dublin Registration District the registered births amounted to 193—104 boys and 89 girls; and the registered deaths to 305—142 males and 163 females.

The deaths, which are 94 over the average number for the corresponding week of the ten years 1881–1890, represent an annual rate of mortality of 45·8 in every 1,000 of the population. Omitting the deaths (numbering 13) of persons admitted into public institutions from localities outside the district, the rate was 43·8 per 1,000. During the fifty-two weeks ending with Saturday, January 2, 1892, the death-rate

averaged 26·2, and was 1·3 under the mean rate for the ten years 1881-1890.

Thirty-eight deaths from zymotic diseases were registered, being 13 in excess of the average for the corresponding week of the ten years 1881-1890, and also 13 over the number for the week ended December 26, 1891. The 38 deaths comprise 10 from influenza and its complications, 8 from whooping-cough (6 of which occurred in No. 2 North City—Lisburn-street—District), 1 from diphtheria, 10 from enteric fever, and 2 from diarrhœa.

The number of cases of enteric fever admitted to hospital is 17, being 3 under the number of admissions for the preceding week, and 7 under that for the week ended December 19. Twenty enteric fever patients were discharged, 1 died, and 115 remained under treatment on Saturday, being 4 under the number in hospital at the close of the preceding week.

The hospital admissions for the week include, also, 2 cases of scarlatina and 1 case of typhus, but no cases of measles were received. During the preceding week 1 case of measles, 3 of scarlatina, and 4 of typhus had been admitted. Three cases of measles, 9 of scarlatina, and 5 of typhus remained under treatment in hospital on Saturday.

Deaths from diseases of the respiratory system amount to 87, being 32 over the average for the corresponding week of the ten years 1881-1890, and 35 over the number for the week ended December 26. They comprise 57 from bronchitis, 23 from pneumonia or inflammation of the lungs, and 3 from croup.

METEOROLOGY.

*Abstract of Observations made in the City of Dublin, Lat. 53° 20' N.
Long. 6° 15' W., for the Month of December, 1891.*

Mean Height of Barometer,	-	-	-	29·818 inches.
Maximal Height of Barometer (on 21st, at 9 a.m.),				30·610 „
Minimal Height of Barometer (on 10th, at 4 p.m.)				28·814 „
Mean Dry-bulb Temperature,	-	-	-	42·3°.
Mean Wet-bulb Temperature,	-	-	-	40·5°.
Mean Dew-point Temperature,	-	-	-	38·3°.
Mean Elastic Force (Tension) of Aqueous Vapour,	-			·235 inch.
Mean Humidity, - - - -	-	-	-	86·1 per cent.
Highest Temperature in Shade (on 3rd)	-	-		58·0°.
Lowest Temperature in Shade (on 22nd),	-	-		25·2°.
Lowest Temperature on Grass (Radiation) (on 22nd),				19·2°.
Mean Amount of Cloud, - - - -	-	-	-	55·2 per cent.
Rainfall (on 21 days), - - - -	-	-	-	3·299 inches.
Greatest Daily Rainfall (on 6th),	-	-	-	·747 inch.
General Directions of Wind,	-	-	-	W., S.W., S.

Remarks.

The leading features of the weather were—a preponderance of south-westerly winds, frequent gales, heavy rains, and unsteady, but often high temperature. From the 16th to the 25th, however, an anti-cyclone lay over England, France, and Germany, and within its central area severe cold and dense fogs with calms prevailed. Even at this time the S.W. wind and mild temperature continued on the Atlantic coasts of Ireland, Scotland, and Norway.

In Dublin the arithmetical mean temperature ($43\cdot0^{\circ}$) was decidedly above the average ($41\cdot3^{\circ}$); the mean dry bulb readings at 9 a.m. and 9 p.m. were $42\cdot3^{\circ}$. In the twenty-six years ending with 1890, December was coldest in 1878 (M. T. = $32\cdot8^{\circ}$), and in 1874 (M. T. = $36\cdot8^{\circ}$), and warmest in 1865 (M. T. = $46\cdot2^{\circ}$). In 1886 the M. T. was as low as $37\cdot9^{\circ}$; in the year 1879 (the “cold year”) it was also $37\cdot9^{\circ}$. In 1887 the M. T. was $39\cdot9^{\circ}$; in 1888 it was $43\cdot6^{\circ}$; in 1889 it was $43\cdot8^{\circ}$; and in 1890 it was $39\cdot2^{\circ}$.

The mean height of the barometer was 29·818 inches, or 0·057 inch below the corrected average value for December—namely, 29·875 inches. The mercury rose to 30·610 inches at 9 a.m. of the 21st, and fell to 28·814 inches at 4 p.m. of the 10th. The observed range of atmospherical pressure was, therefore, 1·796 inches—that is, a little more than one inch and three-quarters.

The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was $42\cdot3^{\circ}$, or only $0\cdot5^{\circ}$ below the value for November, and $5\cdot9^{\circ}$ below that for October, 1891. Using the formula, *Mean Temp.* = *Min.* + (*max—min.* $\times \cdot52$), the value was $43\cdot2^{\circ}$, or $1\cdot7^{\circ}$ above the average mean temperature for December, calculated in the same way, in the twenty-five years' 1865–89, inclusive ($41\cdot5^{\circ}$). The arithmetical mean of the maximal and minimal readings was $43\cdot0^{\circ}$, compared with a twenty-five years' average of $41\cdot3^{\circ}$. On the 3rd the thermometer in the screen rose to $58\cdot0^{\circ}$ —wind, S.W.; on the 22nd the temperature fell to $25\cdot2^{\circ}$ —wind, S. The minimum on the grass was $19\cdot2^{\circ}$ also on the 22nd. There were 6 days of frost in the screen and 15 days of frost on the grass.

The rainfall was 3·299 inches, distributed over 21 days. The average rainfall for December in the twenty-five years, 1865–89, inclusive, was 2·404 inches, and the average number of rainy days was 16·9. The rainfall, therefore, and the rainy days were decidedly above the average. In 1876 the rainfall in December was very large—7·566 inches on 22 days. In 1872, 4·932 inches fell on as many as 24 days; and in 1868 (which was otherwise a fine and dry year) 4·749 inches fell on as many as 27 days. On the other hand, in 1867, only ·771 of an inch was measured on 13 days; and in 1871 the December rainfall was only ·797 of an inch on 15 days. In 1885, only ·742 of an inch of rain was measured

on but 10 days, but in 1886 the rainfall was 3·348 inches, distributed over as many as 21 days. In 1887 ("the dry year"), the rainfall was 1·223 inches on 19 days; in 1888, it was 2·911 inches on 17 days; in 1889, 1·554 inches fell on 15 days; and in 1890, it was 1·856 inches on 11 days.

A lunar halo appeared on the 11th, and a lunar rainbow on the 15th. Solar halos were observed on the 8th, 9th, 13th, and 14th. High winds were noted on 14 days, and attained the force of a gale on as many as 8 occasions—the 3rd, 5th, 7th, 9th, 10th, 12th, 15th, and 28th. The atmosphere was more or less foggy in Dublin on the 7th, 13th, 16th, 20th, 21st, 22nd, 23rd, 24th, and 30th. Snow or sleet fell on the 11th. Hail fell on the 10th.

During the period ended Saturday, the 5th, the weather fell into a rough and rainy state, with squally S.W. winds and high but unstable temperature. On Tuesday, the 1st, and again on Thursday deep depressions skirted the western coasts of Ireland and Scotland, with the result that southerly to westerly gales prevailed, with rainy or showery weather in all parts of the country. On Tuesday night a subsidiary disturbance crossed England, where rain fell heavily. At 8 a.m. of Thursday, the barometer was down to 28·64 inches at Stornoway in the Hebrides. During the following night thunder and lightning occurred in the N.W. and N. of Ireland. Another depression passed by on Saturday, when rain fell heavily at times. One of the most striking features of the week was the high temperature experienced on Thursday, when the thermometer rose to 56° at Oxford, Cambridge, and Loughborough; to 57° in London, at Parsonstown, Shields, Leith, and as far north as Nairn; to 58° in Dublin, and to 59° at York. In Dublin the height of the barometer varied between 29·231 inches at 9 a.m. of Thursday (wind S.S.W.) and 29·888 inches at 9 p.m. of Friday (wind S.S.W.). Temperature in the screen rose to 58·0° on Thursday. The rainfall was ·258 inch on three days, ·195 inch being measured on Saturday. The wind was chiefly S.S.W.

Very unsettled, rough, wet weather prevailed in all districts during the week ended Saturday, the 12th. Sunday was the only thoroughly fine day, but before night cirriform cloud had overspread the sky from the westward, ushering in a deep depression, the centre of which had reached the portion of St. George's Channel between Wexford and Pembroke by 8 a.m. on Monday. A very perfect circulation of strong winds and gales round the cyclonic system was observed. The depression travelled across England and the North Sea to Northern Germany at a great rate. The accompanying rainfall was very heavy in and about Dublin and at Shields. On Tuesday another depression advanced to the North of Scotland, but this was soon overshadowed by a much more serious disturbance, near the centre of which the barometer fell to 27·93 inches at

8 a.m. of Thursday, the 10th, at Sumburgh Head in the Shetland Islands. At this time the barometer stood at 30·32 inches at Lisbon and 30·14 inches at Biarritz. Large quantities of rain or sleet and hail fell, and storms prevailed not only all over the British Islands, but in France, Germany, and Scandinavia also. Thunder and lightning occurred in many parts of Ireland and in the South of England. After a few hours of fair weather on Friday afternoon the weather again became wet and stormy on Saturday. In Dublin the mean pressure was 29·550 inches, the barometer ranging between 28·814 inches at 4 p.m. of Thursday (wind, W.S.W.) and 30·037 inches at 9 p.m. of Friday (wind, W.). The corrected mean temperature was 44·3°. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 43·3°. The screened thermometers rose to 54·2° on Thursday and fell to 33·5° on Saturday. Rain fell daily, the total amount being 2·319 inches, and ·747 inch being credited to Sunday, ·612 inch to Wednesday, and ·617 inch to Saturday. The prevailing wind was westerly.

In the course of the week ended Saturday, the 19th, the weather underwent a complete change over Western Europe. Until Wednesday, the 16th, the distribution of atmospherical pressure was cyclonic, and the weather was for the most part rough, mild, and rainy; except in the North of Scandinavia, where severe cold prevailed, the thermometer reading—12° on Sunday and—14° on Tuesday at Haparanda on the Gulf of Bothnia. In the rear of a depression, which lay over Denmark and the North Sea on Wednesday morning, the barometer rose with great rapidity, so that by 8 a.m. of Thursday a tongue of high pressure, with readings above 30·4 inches, stretched across Norway, the North Sea, England, and the English Channel, to Normandy in France. Within this zone temperature fell fast, so that sharp frost began to be felt at the inland English stations. In Ireland and Scotland, however, southerly winds prevailed and temperature remained steady or even rose. On Thursday night the thermometer fell to 22° at York and Loughborough and to 25° at Oxford. The anticyclone continued to develop until Saturday, when the barometer exceeded 30·75 inches in Holland and Belgium. In Dublin the mean atmospherical pressure was 30·029 inches, the range being from 29·011 inches at 9 a.m. of Sunday (wind, W.N.W.) to 30·497 inches at 9 a.m. of Saturday (wind, S.S.E.). The corrected mean temperature was 44·3°. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 43·6°. The screened thermometers rose to 54·8° on Tuesday and fell to 37·0° on Saturday. The rainfall was ·206 inch on four days, ·100 inch being referred to Monday. The prevailing winds were W.N.W. and S.S.E.

In the fourth week (20th–26th inclusive), very intense cold, with dense fogs, prevailed over the greater part of England until Saturday. In the East of Ireland also the cold was of considerable intensity until

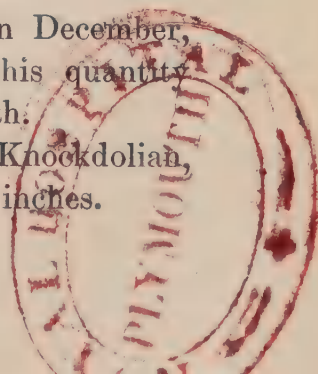
Christmas Day, when a thaw occurred, followed by rain and moderate to fresh S.W. winds on Saturday. Over the greater part of Norway and of Scotland and on the west coast of Ireland, there was an almost complete absence of frost during the week, owing to the prevalence of a southerly to westerly air-current in those localities. The cold in England was due to an anticyclone, which first formed on Thursday, the 17th, and persisted until Friday, the 25th. One of the most striking features accompanying the calm of the anticyclone was the density and persistence of the fog in the London district. For more than 70 hours the metropolis was wrapped in Cimmerian darkness by day as well as by night. In Dublin the fog was thick at times, but much pleasant sunshine was enjoyed at intervals. The mean height of the barometer was 30·226 inches, pressure decreasing from 30·610 inches at 9 a.m. of Monday (wind, calm) to 29·341 inches, at 4 p.m. of Saturday (wind, S.W.). The corrected mean temperature was 36·1°. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 34·5°. The screened thermometers fell to 25·2° on Tuesday and rose to 54·7° on Saturday. Rain was measured on two days, the total quantity being ·047 inch, of which ·038 inch fell on Saturday. The prevailing winds were S.S.E. and S. The rise of temperature towards the close of the week spread from Spain across France to the British Islands.

As compared with the previous week, the closing period (27th–31st inclusive) was much milder; but the weather was in an unsettled, showery condition for the most part. The barometer was lowest over the Norwegian Sea, highest over the Peninsula. Temperature was generally above the average for the time of year over the greater part of Europe—the excess of warmth on the Continent on Wednesday and Thursday being particularly noticeable. Rain fell frequently, sleet and hail in Scotland, with a thunderstorm at Stornoway on Tuesday evening. In Dublin the rainfall was not very heavy, but the five days all yielded an appreciable measurement. The screened thermometers rose to 52·5° on Tuesday. The prevailing winds were S.W. and W., set in on the evening of the 31st.

The rainfall in Dublin during the year ending December 31st has amounted to 27·820 inches on 184 days, compared with 27·562 inches on 200 days in 1890, 27·272 inches on 193 days in 1889, 28·679 inches on 190 days in 1888, 16·601 inches on 160 days in 1887, and a 25 years' average of 27·696 inches on 194·3 days.

At Knockdolian, Greystones, Co. Wicklow, the rainfall in December, 1891, was 4·680 inches, distributed over 23 days. Of this quantity 1·160 inches fell on the 6th, and ·940 of an inch on the 12th.

From January 1st to December 31st, 1891, rain fell at Knockdolian, Greystones, on 178 days, and to the total amount of 34·949 inches.



RAINFALL IN 1891,

At 40 Fitzwilliam-square, West, Dublin.

Rain Gauge:—Diameter of funnel, 8 in. Height of top—Above ground 3 ft. 2 in. ; above sea level, 50 ft.

Month			Total Depth	Greatest Fall in 24 Hours.		Number of Days on which .01 or more fell
			Inches	Depth	Date	
January,	-	-	·672	·181	20th	14
February,	-	-	·042	·024	13th	2
March	-	-	·936	·220	14th	16
April,	-	-	1·553	·482	3rd	14
May,	-	-	2·792	·600	28th	17
June,	-	-	2·753	·604	24th	14
July,	-	-	2·187	·401	3rd	15
August,	-	-	4·953	·985	8th	25
September,	-	-	2·132	·563	19th	18
October,	-	-	3·590	1·176	13th	13
November,	-	-	2·911	1·229	10th	15
December,	-	-	3·299	·747	6th	21
Total,	-	-	27·820	—	—	184

The rainfall was only ·124 of an inch in excess of the average annual measurement of the twenty-five years, 1865–89, inclusive—viz., 27·696 inches.

It will be remembered that the rainfall in 1887 was very exceptionally small—16·601 inches, the only approach to this measurement in Dublin being in 1870, when only 20·859 inches fell, and in 1884, when the measurement was 20·467 inches. In seven of the twenty-five years in question the rainfall was less than 26 inches, and in 1885 it was 26·614 inches.

The scanty rainfall in 1887 was in marked contrast to the abundant downpour in 1886, when 32·966 inches—or as nearly as possible double the fall of 1887—fell on 220 days. Only twice since these records commenced has the rainfall in Dublin exceeded that of 1886—namely, in 1872, when 35·566 inches fell on 238 days, and in 1880, when 34·512 inches were measured on, however, only 188 days.

In 1891, there were 184 rainy days, or days upon which not less than ·01 inch of rain (one hundredth of an inch) was measured. This was in defect of the average number of rainy days, which was 194·3 in the twenty-five years, 1865–89, inclusive. In 1868—the warm dry year of recent times—as well as in 1887, the rainy days were only 160, and in 1870 they were only 145. In 1868, however, the rainfall amounted to 24·935 inches, or more than 8 inches above the measurement in 1887, and even in 1870, 20·859 inches were recorded.

The rainfall in 24 hours from 9 a.m. to 9 a.m. exceeded one inch on two occasions, viz.—October 13th (1·176 inches), and November 10th (1·229 inches). On August 8th, also, nearly an inch fell (·985 inch).

Included in the 184 rainy days in 1891 are 12 on which snow or sleet fell, and 25 on which there was hail. In January hail was observed on 2 days, in March on 9 days, in April on 2 days, and in May on 8 days. Hail also fell once in June, August, October, and December. Snow or sleet fell on 3 days in January, on 7 days in March, on 2 days in May, and on 1 day in September, November, and December. Thunder occurred on nine occasions during the year—once in May and September, twice in June and July, and three times in August. Lightning was also seen on one occasion in each of the following months—viz., August and September, and three times in October.

The rainfall was distributed as follows:—1·650 inches fell on 32 days in the first quarter, 7·098 inches on 45 days in the second, 9·272 inches on 58 days in the third, and 9·800 inches on 49 days in the fourth and last quarter.

The rainfall in the first six months was only 8·748 inches, on 77 days—that is, not one-third of the year's record. In August, as much as 4·953 inches fell on 25 days.

Of the 9·800 inches which fell in the fourth quarter of the year, 3·590 inches were measured in October on, however, only, 13 days, and 3·299 inches in December on 21 days.

J. W. MOORE, B.A., M.D., Univ. Dubl.; F.R.C.P.I.; F.R. Met. Soc.

Abstract of Meteorological Observations taken at Dublin (40 Fitzwilliam-square, West) during the Year 1891.

MONTH	Abs. Max.	Date	Abs. Min.	Date	Mean Daily Max.	Mean Daily Min.	Rainfall	Rainy Days	Mean Height of Barometer	Highest Pressure	Date	Lowest Pressure	Date	Prevalent Winds
January	° 53·7	26th & 28th	° 23·9	7th	° 44·5	° 35·6	Ins. ·672	14	Ins. 30·085	Ins. 30·875	14th	Ins. 29·337	23rd	S.W., W.
February	- 61·9	23rd	30·1	9th	51·0	38·3	·042	2	30·398	30·725	5th	29·824	26th	W., S.W.
March	- 57·9	1st	27·1	12th	47·5	35·8	·936	16	29·858	30·470	3rd	29·052	15th	Calm W., N.W., N.
April	- 65·7	30th	33·1	10th	51·3	40·0	1·553	14	29·964	30·342	20th	29·383	5th	S.E., E.N.E.
May	- 67·8	12th	32·8	18th	56·4	42·8	2·792	17	29·799	30·293	12th	29·237	1st	N.W., N.E.
June	- 73·8	23rd	43·9	10th	65·0	53·0	2·753	14	30·014	30·407	12th	29·457	29th	N.E., E.
July	- 72·8	16th	46·8	10th	64·8	53·2	2·187	15	29·936	30·365	14th	29·434	6th	N.W., S.W.
August	- 69·2	11th	45·6	30th	63·4	52·8	4·953	25	29·731	30·217	6th	28·949	25th	W., S.W., N.W.
September	- 75·6	10th	44·8	7th	63·5	51·6	2·132	18	29·902	30·271	15th	29·076	1st	S.W., W., S.
October	- 62·7	4th	33·0	25th	55·0	44·0	3·590	13	29·626	30·647	31st	28·251	13th	S., S.W., W.
November	- 57·8	18th	31·4	24th	48·1	38·7	2·911	15	29·782	30·693	5th	28·524	11th	S.W., W.
December	- 58·0	3rd	25·2	22nd	48·0	37·9	3·299	21	29·818	30·610	21st	28·814	10th	W., S.W., S.
Extremes, Totals, and Means	° 75·6	Sept. 10th	° 23·9	Jan. 7th	° 54·9	° 43·6	Ins. 27·820	Days 184	Ins. 29·909	Ins. 30·875	Jan. 14th	Ins. 28·251	Oct. 13th	W., S.W.
					49·3°									

JOHN WILLIAM MOORE, B.A., M.D., Univ., Dublin; F.R.C.P.I.;
F. R. Met. Soc.

January 1, 1892.

PERISCOPE.

ALVARENGA PRIZE OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA.

THE College of Physicians of Philadelphia announces that the next award of the Alvarenga Prize, being the income for one year of the bequest of the late Señor Alvarenga, and amounting to about one hundred and eighty dollars, will be made on July 14, 1892. Essays intended for competition may be upon any subject in Medicine, and must be received by the Secretary of the College, Charles W. Dulles, on or before May 1, 1892. It is a condition of competition that the successful essay or a copy of it shall remain in possession of the College.

HOW TO COOK A HUSBAND.

MORE than a decade ago, in the Baltimore Cooking School, the following recipe for "Cooking a husband so as to make him tender and good," was contributed by a lady, presumably of experience:—"A good many husbands are utterly spoiled by mismanagement. Some women go about it as if their husbands were bladders, and blow them up. Others keep them constantly in hot water; others let them freeze by their carelessness and indifference. Some keep them in a stew by irritating ways and words. Others roast them. Some keep them in pickle all their lives. It cannot be supposed that any husband will be tender and good managed in this way, but they are really delicious when properly treated. In selecting your husband you should not be guided by the silvery appearance, as in buying mackerel, nor by the golden tint, as if you wanted salmon. Be sure and select him yourself, as tastes differ. Do not go to the market for him, as the best are always brought to your door. It is far better to have none unless you will patiently learn how to cook him. A preserving kettle of the finest porcelain is best, but if you have nothing but an earthenware pipkin it will do, with care. See that the linen in which you wrap him is nicely washed and mended, with the required number of buttons and strings nicely sewed on. Tie him in the kettle by a strong silk cord called comfort, as the one called duty is apt to be weak. They are apt to fly out of the kettle and be burned and crusty on the edges, since, like crabs and lobsters, you have to cook them while alive. Make a clear, steady fire out of love, neatness, and cheerfulness. Set him as near this as seems to agree with him. If he sputters and fizzes do not be anxious; some husbands do this till they are quite done. Add a little sugar in the form of what confectioners call kisses, but no vinegar or pepper on

any account. A little spice improves them, but it must be used with judgment. Do not stick any sharp instruments into him to see if he is becoming tender. Stir him gently; watch the while, lest he lie too flat and close to the kettle, and so become useless. You cannot fail to know when he is done. If thus treated you will find him very digestible, agreeing nicely with you and the children, and he will keep as long as you want, unless you become careless and you set him in too cold a place.”—*Examiner and Times and Register*, Dec. 19, 1891.

ANTINERVINE.

THIS is the fanciful name given by the discoverer, Dr. Bradfutt, of Philadelphia, to salicylbromanilide. It is a white crystalline powder, odourless, having an acid taste, soluble in alcohol, ether, and warm water, and slightly so in cold water. The discoverer credits it with having antithermic, analgesic, and tonic properties. Acute rheumatism, neuralgia, and *angina pectoris* are relieved by it, and in typhoid it relieves headache and gives sleep. Our contemporary is not, however, satisfied about this latest addition to our therapeutic remedies, and exhibits a want of faith in its curative powers, and goes on to say that it is not a chemical compound at all, but simply an admixture of the following drugs:—Bromide of ammonium, 25 parts; salicylic acid, 25 parts; acetanilide, 50 parts. Mix.—*Répertoire de Pharmacie*, No. 8, 1891.

LÉVOISNE.

M. TANRET (*Répertoire de Pharmacie*, No. 8) has succeeded in isolating a new hydro-carbon, lévoïsne, from cereals. He experimented successfully on rye, barley, and oats. To “lévoïsne” M. Tanret has given the formula $C_{48}H_{40}O_{40}$, the same formula as amidon and dextrine. It turns the plane of polarised light to the left hand, hence the name; it is of a white colour, amorphous, insipid, soluble in water, very soluble in dilute alcohol, sparingly so in the strong liquid. It does not reduce copper, and is not affected by alkaline solutions.

ANOTHER REMEDY FOR WHOOPING-COUGH.

M. CHIBERT declares that he has rapidly stopped the kinks of whooping-cough by sprinkling finely powdered iodoform on the child’s pillow.—*Répertoire de Pharmacie*, No. 8, 1891.

ITCH OINTMENT.

THE following formula appears in our contemporary, *Les Nouveaux Remèdes*, No. 13, for the itch:—Petroleum, 40 parts; white wax, 40 parts; alcohol, 50 parts; soap, 100 parts. Make an ointment.

THE DUBLIN JOURNAL

OF

MEDICAL SCIENCE.

MARCH 1, 1892.

PART I.

ORIGINAL COMMUNICATIONS.

ART. VIII.—*The Control of Inebriates.*^a By E. MACDOWEL COSGRAVE, M.D., F.R.C.P.I.; President of the Section of State Medicine in the Royal Academy of Medicine in Ireland; Professor of Biology, Royal College of Surgeons; Physician to Cork-street Fever Hospital and the Whitworth Hospital, Drumcondra.

THERE are few things more difficult than the successful treatment of inebriates, not from advanced pathological change, but from want of power to keep them from the cause of their diseased condition. For cure, abstinence for a prolonged period is requisite, but, unless the patient is anxious to be cured, and capable of a strong effort, failure is almost certain to result, so many are the temptations, so easily is drink obtained. To put the patient out of the way of temptation is, indeed, rendered possible by Acts of Parliament, but the procedure is so difficult and the treatment so expensive, as to be of but little use.

Medical men are far in advance of lawyers in recognising inebriety as a disease, and it was the interference of the lawyers in the House of Commons which kept the Habitual Drunkards Act from being more useful and workable.

The law has, however, for long recognised to some extent the disease element in inebriety. True, Sir Edward Coke, the highest

^a Read in the Section of State Medicine in the Royal Academy of Medicine in Ireland, Friday, February 19, 1892.

legal authority of his day, wrote:^a—"A drunkard who is *voluntarius dæmon*^b hath no privilege thereby; but what hurt or ill soever he doth, his drunkenness doth aggravate it." But Sir Mathew Hale (middle of the seventeenth century) wrote:—"Although the simplex frenzy occasioned immediately by drunkenness excuse not in criminals, yet if by one or more such practices an habitual or fixed frenzy be caused, though this madness was contracted by the vice and will of the party, yet this habitual and fixed frenzy thereby caused puts the man in the same condition in relation to crimes as if the same were contracted involuntarily at first"—thus recognising the important distinction between mere drunkenness and that more advanced stage when the habit has turned into disease.^c

Perhaps the best description of the inebriate, as distinguished from the ordinary drinker, is that given by Dr. D. G. Dodge before the Select Committee on Habitual Drunkards (1872):—"We make a great distinction between the two classes. One man when he has taken one drink loses the power to control himself in that direction; another man can take several, and be able to stop. But we cannot for the life of us tell why it is that because a man

^a Coke. Institutes. 247. Blackstone's Commentaries. Bk. IV., ch. 2.

^b "The laws claim that the drunkard is a voluntary madman. This is incorrect. The inebriate does not voluntarily renounce control; on the contrary, he believes he can control his actions, while he cannot. Though he does not know it, alcohol paralyses inhibition."—Dr. T. L. Wright, Bellefontaine, Ohio. Society for the Study of Inebriety. Jan. 6th, 1891.

^c It will be seen from the following extracts that the law on this point is still unsettled:—

"Leeds Assizes, December 11, 1891, before Mr. Justice Wright, John Routledge was indicted for causing grievous bodily harm with a red hot poker to Elijah Holmes, at Doncaster, on July 18th. His counsel, Mr. B. G. Wilkinson, urged that it was done while the prisoner was drunk, and unable to tell what he was doing. His lordship said it was impossible to accept the statement that the prisoner was drunk as an excuse in law. For doing a thing of this kind a man must answer whether drunk or sober. Society could not exist if such a plea were to be allowed. There was not, however, evidence showing that the prisoner was in a completely helpless state of intoxication."

"On the same day, before Mr. Justice Lawrence, Liverpool, John Miller was tried for the murder, under shocking circumstances, of his wife, Jane Miller, on the 13th November. Miller, who was a blacksmith, was a heavy drinker, and under the influence of drink when he battered his wife's head in with a hatchet without any apparent cause. His lordship, in summing up, said: 'It was quite right that a jury should consider whether a man could drink himself into such a condition that he was incapable of forming any intention, and that he had no control over himself. If that was proved to them satisfactorily, then the crime would be reduced from murder to that of manslaughter.'"

has taken one drink he must go on until he is saturated with it, without any power to stop. We look upon that man as actually diseased with alcohol, and only that class."^a

The Inebriates Acts, imperfect as they are, have, at any rate, formally recognised the disease element in inebriates, who are thus defined:—"Those who, notwithstanding the plainest considerations of health, interest, and duty, are given over to habits of intemperance so as to render them unable to control themselves, and incapable of managing their own affairs,^b or such as to render them in any way dangerous to themselves or others."^{c d}

For practical purposes, the inebriates for whose treatment we require extended powers may be divided into two classes:—

I. Those who cannot resist the temptation to drink, but will at any cost or sacrifice gratify the craving.

We all meet such cases too frequently, and know the difficulty of influencing them. I have frequently explained that to go on drinking meant death, and have convinced the patients of the fact without at all altering their habits. I have stood by whilst patients were told that they were getting into financial difficulties and that nothing but a sudden pull up could avoid a crash; they have acknowledged and deplored the fact, but made no change. I have pointed out to fathers how they were destroying the happiness

^a Answer 3072.

^b A commission of lunacy was supported against a person who, when sober, was a very sensible man, but, being in an almost constant state of intoxication, he was considered incapable of managing his property.—Collinson on Lunacy. Vol. I., p. 71. Quoted by Dr. R. B. Grindred in Bacchus. P. 505.

^c "LAW OF PARENT AND CHILD IN JERSEY.—The Attorney-General appeared before the Royal Court, on Saturday, and called on the judges to deprive Mr. Nicholas Anthoine, clerk to the Impost Office, of the right of control or management of his children, he being an habitual drunkard, and that the said Court should appoint fit guardians for the said children. The Attorney-General stated that the persons directed to inquire into Mr. Anthoine's conduct had reported that he had often been seen drunk, and, whilst in that state, had danced in the streets, gathering a crowd around him, and was, consequently, unfit to be an example to a growing family, and unfit also to be entrusted with its control. The Solicitor-General, on behalf of Mr. Anthoine, contended that the articles exhibited were insufficient to warrant the Court in inflicting so serious a penalty on any man as depriving him of the control of his own family, and instanced his being able to conduct the affairs of his office as a reason against granting the prayer of the citation. The Attorney-General replied, again urging the prayer of the memorial. The chief and other judges confirmed the Attorney-General's demand, and ordered that the defendant's family be given into the guardianship of a proper person chosen by their nearest relations, with the approbation of the Court."—Quoted from a Jersey paper of 1837 in Bacchus. P. 506.

^d Report. P. v.

of their wives and children; I have pointed out to mothers the neglected condition of their children and the dirt of their homes. Both fathers and mothers have heard me, assented, mourned the fact—and continued drinking. Indeed, in many cases so hopeless have I felt that I have longed for a complete physical break down, such as an attack of *delirium tremens*, in the hope that the utter physical prostration might give a chance of cutting off the supply of stimulants, and that possibly after such a shock some impression might be made on the weakened moral nature, so that the habit thus broken might not be resumed.

Such cases as these are sometimes hereditary, sometimes acquired.

II. Those who suffer from intermittent attacks, from *mania à-potu*, who go on for long periods, even months, with apparently no desire for drink, and then having tasted drink suffered mental trouble, or sometimes, with no discoverable cause, break out and drink, morning, noon, and night for days, perhaps even for a week. In one case I have noted, the attacks used to come about twice a year. The gentleman would lock himself into a room with a supply of brandy, no one daring to interfere with him until at the end of two or three days all noise ceased; his relatives would then break open the door and find him comatose. Between the attacks he attended to a large business, and took a leading part in religious and charitable work. The description of such a case given by Besant in “The Demoniac” is scarcely an exaggeration of the reality.

These cases are generally examples of hereditary neuroses.

In both classes of cases “total abstinence is the only safe and sure road to recovery.”^a

In the first class nothing else will stop the craving. As long as alcohol in any form is taken the wish for it will continue, but when it is given up for a time the craving becomes less. There is also improvement in the physical and moral condition, food can be better taken, the strength improves, and the patient’s promise can to some extent be relied on.

^a Dr. D. S. Dodge, Physician to the New York State Inebriate Asylum, before the Select Committee on Habitual Drunkards. In Answer 2973 he says:—“It is a physiological fact that when a habit has been formed or contracted, an absolute removal of the agent that produced the habit is necessary in order that a new state of things may become possible. Place before a patient a liberal supply of tempting and nutritious food, and ask him to starve himself to death; nature is stronger than the will—it is an impossibility. Place alcohol before him and ask an inebriate to cure himself gradually; it is equally an impossibility.”

In the second class of cases the natural tendency is for the attacks to become more frequent, and their effects more lasting, so that gradually the system breaks down. The only hope in such cases is to reverse this process, to tide over attacks, and so prolong the intervals and render the impulse more easy to resist.

To keep either class in their own houses from drink is more than difficult—their ingenuity, their unscrupulousness, and the certainty that some about them will help to supply drink, render treatment nearly hopeless. Not long ago, whilst helping to place a patient suffering from alcoholic paralysis on a water-bed, I found a bottle containing whisky under her pillow, and yet for days she had been unable to leave her bed, and everyone who had access to her room professed to be trying to keep drink from her. In another case, which also ended fatally, nine brandy bottles were hidden about the bed. Even in hospitals we all know how difficult it is to prevent stimulants reaching our cases.

For successful treatment such cases must be admitted into institutions where they can be controlled—not allowed to have drink sent in, not allowed to go out for it. Our power in this direction is certainly limited. Patients must either go voluntarily into a lunatic asylum,^a where they cannot be detained if they wish to leave; or be sent to Belgium^b—a course which has manifest disadvantages; or be treated under the Inebriates Acts, 1879 and 1888, which, unfortunately, impose so many difficulties that they are made but little use of in England, and are altogether unused in Ireland. During 1890 only 109 patients were admitted into Retreats under the Acts,^c and this was a higher number than in any previous year.^d

The powers given by the Inebriates Acts (the expression “Habitual Drunkards” was struck out by the amending Act of 1888, which also made the former ten-year Act permanent) are briefly as follows:—

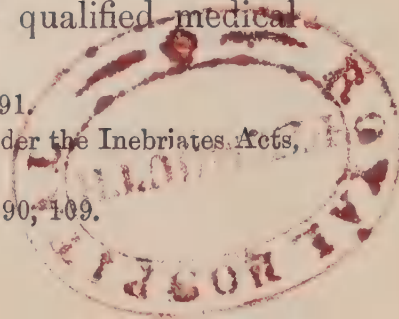
Justices of the Peace may grant a license for any period not exceeding thirteen months to any person or persons to keep a retreat for habitual drunkards. One of the licensees must reside on the premises and be responsible for its management, and if the licensee is not on the Medical Register a duly qualified medical

^a Under 29 & 30 Vict., cap. 57.

^b Cf. *British Medical Journal*. November 7th and 14th, 1891.

^c Eleventh Annual Report of the Inspector of Retreats under the Inebriates Acts, 1879 and 1888, for the Year 1890.

^d 1885, 77. 1886, 73. 1887, 66. 1888, 99. 1889, 78. 1890, 109.



man must be employed as attendant. No such license can be granted to any person licensed to keep a lunatic asylum.

An habitual drunkard who wishes to be admitted into a Retreat must apply in writing to the licensee, and state the time during which he undertakes to remain. The application must be accompanied by the statutory declaration of two persons that the applicant is an habitual drunkard, and his signature must be attested by any two Justices, who must state that he understood the meaning of his application, which must have been explained to him. The applicant may then be detained for the whole of the specified term, which must not exceed twelve months.

From the passing of the first Act medical men have constantly complained of its inadequacy, and the very small improvement made by the amending Act has been deplored. The subject of the deficiencies of the first Act has already been brought before this Section by Dr. Tweedy.^a The frequent discussions of the subject by the Society for the Study of Inebriety has educated public opinion in the same direction, and has helped to formulate our requirements. The special committee of the British Medical Association has also done good work.^b

In Scotland feeling is so strong that, in 1890, Mr. Morton's excellent Restorative Homes Bill, approved by leading members of the medical and legal professions, was introduced into Parliament. A similar movement is going on in other countries—even in America, where legislation on this matter is much in advance of England. An important bill, in which the Emperor is personally interested, is likely soon to become law in Germany.

Now to deal shortly with what is required.

I. Voluntary entrance into an inebriates' home should be made much easier. The necessity of appearing before two Justices is especially odious. It is not at all easy to get two Justices, and the consequent delays and disappointments (added to the dreaded publicity) have kept many cases from treatment. Surely one Justice

^a State Control of Chronic Inebriates. Transactions of the Academy of Medicine in Ireland. 1884.

^b "For years past your committee has, with the Society for the Study of Inebriety, been urging on the Government the need for an inquiry into the working of the Inebriates Act, 1879."

"Existing legislation has these chief defects: There is no provision for the poor; admission of a voluntary applicant for reception in a licensed retreat is rendered forbidding by an enforced appearance before two Justices; and an inebriate can be received and detained in such a retreat only at his own request."—Extracts from Report of Inebriate Legislation Committee to the British Medical Association. 1891.

ought to be enough. The British Medical Association and the Society for the Study of Inebriety have urged this change, which has also been recommended by the Government Inspector of Retreats.^a As one magistrate can at present commit a person of unsound mind to a lunatic asylum, surely one might be trusted to commit an inebriate to a retreat.^b

It would, indeed, make the Act much more workable if entrance was still more simplified, and no appearance before a magistrate required. In Mr. Morton's Restorative Homes Bill it was suggested that in entering a Home the transaction should be merely with the superintendent of the Home. The application (signed by the applicant and two respectable witnesses) engaged that he would remain in the Home subject to the provisions, rules, and regulations until discharged. One of the provisions was that the time of detention should be twelve months, unless circumstances rendered it expedient to discharge him sooner.

Dalrymple's original bill had a practically similar provision. With all the safeguards for inspection and appeal that are in the present Acts, no harm could arise from entrance into a Retreat being made comparatively easy.

II. There should be power to send people to inebriate asylums; this power to be invoked by the person's family or friends, or by the public authorities. Magistrates to have power to commit, or this power to be given to an inspector, who should summon a small jury to try the case, the accused to be present and heard in his own defence. The very possibility of such action being taken would have a restraining effect in many cases. If able to pay there should be power to compel payment.

III. Provision for poor cases is urgently needed. This would, of course, cost money, but if it led to the cure of inebriates it would lessen police court, workhouse, prison, and lunatic asylum^c charges. The cost need not fall on the general body of the rate-payers. The inmates should be required to work to help to meet the cost of their support, and part, if not all, of the residue

^a Seventh Annual Report. 1886.

^b A declaration before one Justice is required in South Australia, Victoria, and New Zealand.—Inebriety. Dr. Norman Kerr. Ed. 2, p. 378.

^c "I am greatly concerned that, whatever principle is adopted in future legislation in regard to the restraint of drinking, the 400 cases who year by year in Scotland are made absolutely insane by drink shall in some way be considered and provided for, as well as the ordinary habitual drunkards."—Seventy-seventh Annual Report of the Royal Edinburgh Asylum for Insane.

might fairly be drawn from the trade which makes a profit out of inebriates. This would be no harder on "the trade" than Mr. Ritchie's proposal that they should form a fund to buy up their own, so-called, vested interests. This plan has been adopted in other countries. The Inebriates' Home of King's County, New York, gets 12 per cent. of the license moneys.^a This is an example which might well be followed.

The small fines and short terms of imprisonment at present imposed for drunkenness are wholly inadequate. The Act regulating the fines is 4 Jac. I., c. 5., and prescribes a "forfeiture of 5s., or the sitting six hours in the stocks, by which time the statute presumes the offender will have regained his senses and not be able to do mischief to his neighbours."^b That was very good treatment when drunkenness was only occasional, but for the chronic "drunks" of the police courts seven days' imprisonment just gives them time to pull themselves together at the expense of the ratepayers, and to be ready for a fresh spree when they are discharged. It would be much better that the sentences should each time be made longer, and that anyone who was convicted of drunkenness a certain number of times^c in one year should be committed to an inebriate asylum.

In New York the trustees of the Inebriates' Home can visit the county jail and chose from the imprisoned for intoxication or habitual drunkenness such as they think fit subjects for the Inebriates' Home. On the certificate of the President of the Home the jailer hands over the prisoner to the authorities of the Home.^d

IV. There are defects in the present Acts which unnecessarily add to the difficulties of the licensee.^e Thus a patient can easily escape if he likes, and the licensee has no right to use force to prevent him; and so he can go out, get drunk, and come in and make a disturbance. There is no punishment for such a patient except for having had drink, and the Home Secretary will not prosecute. When expenses are incurred by the issue of a warrant and by bringing the patient back from a distance, there is no power of compelling the patient or his representatives to pay them. There

^a Inebriety. Dr. Norman Kerr. Ed. 2, p. 358.

^b Blackstone. Bk. IV., ch. 4, x.

^c In South Australia any person convicted of drunkenness three times within six months can be committed to a Retreat.

^d Inebriety. Dr. Norman Kerr. Ed. 2, p. 358.

^e Cf. Dr. F. J. Gray's paper, read before the Society for Study of Inebriety, Oct. 3rd, 1888.

is no punishment for a patient who asks for an inquiry if his complaint proves to be frivolous and vexatious.

V. The part of the liquor traffic which consists in encouragement of drunkenness should be suppressed.^a I have known a husband caution the publicans and spirit grocers of the locality not to supply drink to his wife without his word having the slightest effect. His things were pawned, drink was procured, and in some cases the bills for it were sent in to him, the dealer calculating that he would pay rather than make public his misfortune.

It has been suggested that a "Register of Drunkards" be kept by the police and copies given to dealers in liquor, who shall not be allowed to sell to any on the list.

In Prince Edward's Island when proper notice in writing is given to any dealer in intoxicating liquor that a person is addicted to drink, he is not allowed to sell him any intoxicant. The penalty for the first offence is a fine of not less than £5; for subsequent offences a fine of between £5 and £10 and imprisonment for a period not exceeding thirty days.^b

I have brought this subject before the Section, believing that in many cases inebriety is a disease closely allied to insanity and susceptible of successful treatment, if power is given to keep the patient from drink for a sufficiently long period; and believing that the sooner the case is taken in hand the more is the probability of cure. I trust that my paper, short and imperfect as it is, may be the starting-point of an important discussion.

^a There is a statute in Pennsylvania which provides that saloon-keepers shall be held responsible in damages for injuries resulting from their sale of liquors to intoxicated persons. The Supreme Court of the State has lately made a decision which sustains the law as constitutional and equitable. A poor widow sued a liquor seller because he sold liquor to her husband until he was unable to guide his steps homeward, fell into a gutter, contracted pneumonia, and died. A jury gave the widow substantial damages, and upon appeal the Supreme Court sustained the verdict and the law. It brushed away without much ceremony the pleas made for the saloon-keeper that pneumonia, and not liquor, was the immediate cause of death, and that the man took the liquor voluntarily. The Court thus replied to the last plea: "Every drunkard not only takes liquor voluntarily, but whenever he can get it, and because of his weakness the law makes the saloon-keeper responsible for selling to such persons. He has not the will-power to resist the temptation, and for this reason the sale to him is forbidden."

^b Inebriety. Dr. Norman Kerr. Ed. 2, p. 367.

ART. IX.—*Oöphoritis: its Causes and Treatment.* By THOMAS MORE MADDEN, M.D., F.R.C.S. Ed.; Obstetric Physician and Gynæcologist, Mater Misericordiæ Hospital, Dublin; &c.

ALTHOUGH the study of ovarian disorders (including tumours as well as inflammatory diseases therein) has become so largely developed within a comparatively recent period that a distinct course of lectures might now be profitably devoted to this special subject, it may, nevertheless, I think, be found possible to condense within a very brief space all that is of immediate practical importance with regard to the general pathology and treatment of the inflammatory affections to which the ovaries are subject.

Acute Oöphoritis.—Whatever may be the case elsewhere, in the Mater Misericordiæ Hospital, at least, acute inflammation of the ovaries is by no means uncommonly brought under our clinical observation, especially in patients originally admitted for the treatment of dysmenorrhœa. The frequency of this disease as here observed in these and other instances is, however, greater than would appear to be the case in the experience of some other gynæcologists. Thus, for instance, one of the most distinguished authorities on this subject, Dr. Emmet, of New York, says:^a—

“Primary interstitial inflammation, or (according to Kiwisch) inflammation of the ovarian stroma, occurs very seldom in the non-puerperal state, especially if we exclude slight œdemas and hyperæmias, which are frequently developed in the pelvic organs during menstrual congestions, and other determinations of blood. Schroeder states: ‘Two forms of oöphoritis are to be distinguished: the parenchymatous, or follicular, in which the structures proper of the gland, the Graafian follicles, are inflamed, and the interstitial, in which the connective tissue stroma is inflamed. Inflammation of the glandular part of the Graafian follicles is, according to the investigations of Slavjansky, very frequent.’ Scanzoni and others designate a third form due to ‘inflammation of the peritoneal covering of the ovary,’ but, as recent observers have been able to demonstrate the fact that the ovary is not covered by the peritoneum, this form cannot be accepted without further explanation. The surface of the ovary undoubtedly becomes inflamed, but this is due to its close connection with the peritoneum, so that any inflammation of this membrane in the neighbourhood of

^a Vide Principles and Practice of Gynæcology. By Thomas Addis Emmet, M.D. Third edition. P. 649.

the ovary must involve that organ. This is so common that we believe the ovaries suffer far more from peritonitis or cellulitis in their vicinity than from disease originating within or confined to their own structure." Scanzoni met with only a single case of non-puerperal acute oöphoritis, where, in consequence of death from pneumonia, he was able to study the exact pathological changes. After describing the *post-mortem* condition he says: "The pathological alterations which we have met with in this ovary correspond perfectly to the description which some authors have given of acute ovaritis; considerable increase in the size of the organ, notable hyperæmia, traces of effusion in the vesicles, purulent foci in the parenchyma, and fibrinous exudation under the peritoneal envelope of the organ. After what precedes, it may be seen that in this case we had a combination of the three forms of ovaritis, which confirms our assertion on the subject of the rarity of its existence in an isolated form."

Ætiology.—Besides these dysmenorrhœal cases in connection with which, as already mentioned, we here meet with ovarian inflammatory conditions in a larger proportion of instances than, according to the writers just mentioned, might be supposed, acute oöphoritis also comes before us as the result of uterine sepsis or puerperal inflammation, and still more commonly than in either of the above cases it occurs as a consequence of gonorrhœal infection, being, as Sir Spencer Wells has observed, "probably of much more frequent occurrence than acute orchitis is in the male." The testicles are more liable to mechanical injuries, but are probably not more liable to extension of the poison of gonorrhœa or of its sympathetic effects, and they are free from the periodical hyperæmia which may be regarded as the first step in the process of ovarian inflammation. This periodical hyperæmia, influenced by accidental sudden suppression of discharge of blood from the uterus, is the usual history of an attack of oöphoritis. Amongst its other occasional causes have also been enumerated exposure to cold, particularly soon after delivery, local injuries, acute tubercular disease, the use of emmenagogues and of substances employed to procure abortion, the metastasis of rheumatism or of other diseases which in the male might similarly produce orchitis, and lastly inordinate or premature sexual excitement, or coition too soon after parturition or too near the menstrual period.

Symptoms.—In the majority of cases of this kind admitted into the Hospital the leading symptoms of the disease were continuous

dull or burning localised pain on either side just above the symphysis pubis, increased and extending its area on motion or touch, together with some fulness or tumefaction over the affected ovary, though this is not always externally or vaginally recognisable until a digital examination per rectum is made by which the swollen and painful ovary may be readily distinguished. Moreover, in such cases there is invariably more or less constitutional febrile disturbance, generally a high temperature, nausea, or vomiting.

Treatment.—In the treatment of acute oöphoritis there is little to be added to the old and often effectual routine of poultices, hot anodyne stupes, and, if necessary, leeches, over the seat of pain, saline purgatives, hot baths, and vaginal irrigations, opiates, bromides or other sedatives to relieve pain, conjointly with the administration of iodide of potassium in full doses, or some mercurial, such as grey powder, or Plummer's pil. calomelanos comp., in three or four-grain doses, with as much antipyrin every sixth hour until the inflammatory action has been thus subdued.

Chronic Oöphoritis.—Chronic inflammation of the ovaries is, as I am convinced from clinical observation, also a more common disease than is generally recognised, and not unfrequently gives rise to symptoms wrongly ascribed to other morbid conditions. Moreover, its consequences are so far-reaching, giving rise, as they do, to a long chain of reflex and nervous complications, and its treatment by any of the remedial measures ordinarily employed so often proves unsatisfactory, that fuller consideration must be devoted to these cases than has been just given to the acute form of ovaritis, or oöphoritis as it is more generally termed.

Causes.—In the majority of the instances of chronic oöphoritis with which we have here to deal, this condition is the direct sequence of the acute and more particularly of the gonorrhœal form of the disease, which has been already sufficiently discussed. In some instances, however, we are unable to trace the complaint to any well-marked attack of acute ovarian inflammation, and in such cases it may arise from tubercularisation within the ovary itself. The importance of tubercular disease in this respect as a common factor in the causation of chronic oöphoritis was long since pointed out by M. Bernutz,^a whose very clear demonstration we may here follow with regard to the great similarity between such cases and those of tubercular orchitis; all the

^a Vide Bernutz and Goupel's Clinical Memoirs. Diseases of Women. Vol. II., p. 23.

details of the one, the symptoms during life, and the appearances after death, corresponding with those of the other. There is first the changes in the ovaries; the one, a shapeless mass exactly resembling a testicle destroyed by tubercle; the other containing softening tubercle in its carnified parenchyma, represents a tuberculous testicle. Then, the pathological condition of the tubes, the mixture of pus and softened tubercular matter which they contained, and the tubercular infiltration of their mucous membrane, exactly corresponds with the alterations of the epididymis and vas deferens in tubercular orchitis. Moreover, the condition of the pelvic peritoneum, the serous collections in some places, the purulent in others, and the more or less advanced tubercular deposits of which it was the seat, present us with an almost absolute identity with the alterations of the tubercular tunica vaginalis. Lastly, the tubercularisation of the mesenteric glands, and the miliary infiltration of the lungs, complete the analogy of the cases in the two sexes. Nor is the analogy less complete in regard to the symptoms. The earlier symptoms correspond with those occurring in the male; the pelvi-peritonitis arising in the one from tubercularisation of the ovaries, while in the other the tubercular orchitis is the starting-point of the mischief. This form of pelvi-peritonitis presents this remarkable peculiarity that, notwithstanding its apparent benignity, it almost invariably results in suppuration, which presents the character of spurious peri-uterine phlegmons. After puncture, pus, or even with it part of the ovary, escapes per rectum; this evacuation is followed by a temporary improvement, similar to that which follows in tubercular orchitis, where a puncture or incision of the distended tunica vaginalis allows the escape of pus and testicular *débris*. Then follow alternations of improvement and exacerbation, during which the constitution becomes seriously altered, and signs of pulmonary tubercularisation appear, just as obtains in tubercular orchitis.

Symptoms.—No disease met with in gynæcological practice is probably more obscure and insidious in its inception than chronic oöphoritis, or less definite in its general symptoms, of which the most constant are anæmia and hysteria, associated with or dependent on the disordered function of the diseased ovary—*i.e.*, imperfect and generally painful menstruation. These symptoms are obviously of no pathognomonic value until their special significance in such cases has been elucidated by properly-directed local examination; and before that is deemed necessary the symptoms

of oöphoritis are liable to be confounded with those of some of the uterine flexions or displacements met with in connection with ovarian disorders. Or else, those symptoms of oöphoritis are erroneously ascribed to hysteria from the circumstance of cerebro-nervous derangements of this kind being very generally attendant on ovarian irritation.

Any doubt regarding the diagnosis of these cases may, however, readily be cleared up by a conjoint or bi-manual examination per rectum and externally, on which the enlarged and tender ovary, if the case be one of oöphoritis, can be at once detected, the abdominal examination then further revealing some tenderness on pressure and tumefaction on either or both sides of the hypogastrium and above Poupart's ligament. Under such circumstances, if there should also be present some degree of constitutional disturbance, and evidence of general hyperæsthesia, or hysterical excitability, together with derangement of the menstrual health, whether in the form of dysmenorrhœa, suppression, or other catamenial irregularities—ovulation being necessarily imperfect or painfully accomplished in an ovary thus disorganised—we need have no hesitation in the diagnosis of the case as one of chronic oöphoritis.

In those displacements of the ovaries which have been discussed by me elsewhere, and more especially in their most frequent form—viz., prolapse of the ovary into Douglas's fossa—the displacement, if not soon remedied, almost always eventually leads to inflammatory changes in the necessarily tumefied and congested dislocated gland. And to this condition in these instances, as in all other cases of chronic oöphoritis, attention is first directed in the great majority of instances by the intensity of the consequent dysmenorrhœal suffering.

As already observed, acute inflammation of the ovary, if neglected or not aborted by proper treatment, seldom terminates by resolution, but more commonly gradually subsides to some extent, and so passes into the chronic form of the disease. The former may, and the latter very frequently does, when thus neglected, result in the complete disintegration and softening of the stroma of the affected organ, leading to suppuration. In this way the ovary may eventually, as I have seen in some instances, become converted into a thin-walled pyogenic cyst, containing a quantity of intolerably foetid pus. In one of these cases the cyst thus formed ultimately ruptured into the peritoneal cavity, and so caused the death of the patient. In the other I was allowed to

effect the removal of the cyst, which contained a large amount of pus. Fortunately, however, the consequences of chronic oöphoritis are by no means generally so immediately grave as in the cases just referred to; and in a larger number of instances of this kind the chief pathological conditions thus produced are congestive hypertrophy of the implicated glands and hyperæmia of the adjacent peritoneum, leading, possibly, to plastic, serous, or hæmorrhagic exudations or effusions—the latter, probably, affording an explanation, in many instances, of the symptoms which are generally described under the names of pelvic peritonitis, cellulitis, and also of pelvic hæmatocele. On the other hand, the ovaries after long-enduring chronic inflammation in some instances eventually become atrophied, hard, and nodular. Moreover, it should also be borne in mind that, as was pointed out by Dr. Graily Hewitt, chronic inflammation of the ovary does not necessarily always leave behind it any permanent alterations such as I have described, and that, as he says, “at the end of sexual life ovaries which have been the seat of ovaritis for years may present nothing remarkable.”

Treatment of Chronic Oöphoritis.—In the milder or less-marked forms of subacute or chronic ovarian inflammation, the most serviceable plan of treatment will be found in the use of counter-irritation by liniment of iodine or blistering, followed by inunction of oleate of mercury with morphin over the affected gland, together with the long-continued use of bichloride of mercury in doses of the one-twenty-fourth of a grain thrice a day, with which may be advantageously conjoined iodide of potassium in efficient doses and given in combination with bark and other tonics. At the same time, bearing in mind the commonly observed association of an anæmic and hysterical or neurotic constitutional condition with this disease, whatever other treatment may be resorted to, the administration of bromides of potassium or sodium, together with valerian or other special nerve sedatives and tonics, such as the valerianates of quinine and iron, should never be omitted from the treatment of these cases.

It must be admitted, however, that in not a few instances these and all similar methods of general treatment prove wholly ineffectual in chronic ovarian inflammation or irritation. Dr. Emmet, whose remarks on this subject are well deserving of our consideration, may be here quoted:—“It is difficult to afford any marked relief during the menstrual life of the woman. Within

the whole range of the disorders to which women are liable, none, as a rule, present so uncompromising an outlook as this, for both patient and physician. A serious state of anæmia exists in all these cases, and the condition has already long reached a stage when it would be of little importance to determine what was the cause and what was the effect. The close relation existing, through the sympathetic system, between the generative function and general nutrition has already been treated of. During the menstrual life of a woman, the dominant influence is that which is emitted from the ovaries, and when normally directed is a most potent stimulus to healthy nutrition. It can, then, be readily understood that to correct this extreme state of anæmia, while ovulation itself is so imperfect, must be difficult. After the menopause, however, the sympathetic nerves again become dormant, in their relation to sexual functions, as before puberty, and are chiefly concerned in correcting and repairing the defects in nutrition. There are many cases where, by judicious treatment at an early stage, health can be regained. In other instances, I have known the reparative powers of nature to prevail, after every artificial means had been resorted to, and the cases regarded as hopeless. We should, then, never despair in any case. But the prognosis often turns on the degree of judgment with which the case has been treated by the physician in charge of it at the beginning. Many a woman has been rendered incurable in consequence of the opium habit, contracted at the instigation of an ignorant or careless medical adviser. Of all drugs none is more potent than morphin to produce anæmia, and to cause neuralgia by a long continuance of its own poisonous effects. I have seen several instances of so-called oöphoritis in which morphin had been freely used for years to relieve pain over the region of the ovaries, and in which, under more judicious management, an improvement in the general health took place, and all pain disappeared in two or three months after the opium habit had been broken up. I have no doubt that there are cases of local neurosis due to pressure exerted by the contraction of ovarian tissue. In these cases the pain not only continues, but will become worse, if the use of anodynes is discontinued. But in the beginning, the ill-judged use of opium doubtless aids in producing an anæmia which would otherwise not occur; and it may even induce inflammation of the ovarian tissue, through its deleterious influence on nutrition. After a certain stage has been reached in the use of morphin, but

few victims will have the courage to make a real effort to get rid of the evil; in fact, the chances for reform from the opium habit are less promising than those for a full restoration of the lowest drunkard from the gutter. But the attempt at reform must be the first step, and the habit must be broken up if possible, for so long as it exists no accurate idea can be formed of the local condition. To direct any special course of treatment is impossible, since every function of the body will be impaired to a greater or less degree."

Nevertheless, I would venture to take a somewhat more hopeful view than Dr. Emmet does of the general treatment of these cases, having, in many instances, found all the well-marked symptoms of oöphoritis amenable to the therapeutic measures to which I have already referred; whilst even in these still graver cases, in which chronic oöphoritis has resulted in suppuration, I see no reason why you should not, in the first instance at least, empty the ovarian abscess by aspiration, and then wash out the cavity with an iodised injection, as I have myself done, with satisfactory results under such circumstances. Should that course, however, be contra-indicated, or prove useless, in these cases, as in all other instances of severe oöphoritis in which, after a fair trial of other measures, the gravity and urgency of otherwise irremediable constitutional or neurotic, as well as of local, symptoms are such as to call for immediate treatment, we will then be justified in resorting to the extirpation of the diseased gland. This may be accomplished in either of two ways—first, by simple oöphorectomy, an operation which, although long previously suggested by Blundel, was first carried into effect in 1872 by three surgeons operating almost at the same date, in different countries and without knowledge of each other's procedure—viz., Dr. Battey, at that time of Georgia, Mr. Lawson Tait, of Birmingham, and Dr. Hegar, of Freiburg; or secondly, and as I think far preferably in the cases now under consideration, the same object may be effected by Mr. Lawson Tait's own more rational and scientific operation, the advantages of which, when thus necessitated, in suitable cases and conditions, has been established beyond any possibility of controversy by the brilliant results in Tait's hands of that operation—viz., the removal not only of the affected ovaries but also of the Fallopian tubes.

ART. X.—*Multiple Abscesses of the Brain.*^a By ALFRED R. PARSONS, M.B., Univ. Dubl.; late House Surgeon in Sir P. Dun's Hospital, Dublin.

A COMPLETE and accurate diagnosis of intracranial disease is often beset with difficulties. It demands that we should be able not only to state the site of the lesion, but also to describe its nature. Guided by what experimental research and pathological investigation have taught us of the functions most intimately connected with certain regions of the brain, we attempt to meet the first part of the demand chiefly from the focal symptoms which the patient presents, while in the clinical history of the disease and the general constitution of the sufferer, we seek to find some indication of the nature and cause of the morbid process itself. A very limited acquaintance, however, with the symptomatology of organic cerebral disease is sufficient to prove that in many cases we have to base our diagnosis altogether on the general as distinguished from the focal symptoms. The former class of symptoms accompanying, as they do, to a greater or less extent, pathological processes situated in parts of the brain remote from each other, enable us to do little more than conjecture what the site of the lesion is; we are, consequently, often, in the absence of focal symptoms and of any indication as to the nature of the mischief, unable to form a more satisfactory diagnosis than the vague one of "Intracranial disease." Such cases can be cleared up in no other way than by a *post-mortem* examination; and it is frequently at the autopsy a matter of astonishment that the extensive lesions found after death did not give rise to more distinct focal manifestations during the life of the patient.

The specimens which form the subject of this paper were removed from a patient who was admitted to Sir P. Dun's Hospital last November in an enfeebled state of mind and body. The condition of his intellectual capacity may be gauged from the fact that, though a gardener by occupation, and hence, presumably, with more highly cultivated faculties than the ordinary labourer, he was unable to perform the most elementary arithmetical calculations, to count backwards from twenty, and the only reply to the usual question respecting his age was, "I might be 45 or 60," given in a tone which plainly indicated that he did

^a Read before the Section of Pathology in the Royal Academy of Medicine in Ireland, on Friday, January 22, 1892.

not think there was much difference between them. His inability for physical exertion was manifested on trying to stand, as, if unsupported, he at once fell and was quite unable to make any attempt at walking without two assistants. The meagreness of the following clinical notes, taken by Mr. Morton, clinical clerk, is to be largely attributed to the patient's failing memory :—

CASE.—A. B., aged forty-five(?), a gardener, was admitted to hospital under Dr. Finny's care, on the 11th of November, 1891, complaining of severe headache which he states is continuous, of a purulent discharge from his right ear, and of loss of power over his lower limbs. He says that he cannot walk or even stand unsupported, but that if assisted for some time he can do so. No accurate account of the time or order in which these symptoms manifested themselves can be obtained from him, and the general reply to an inquiry directed to the duration of any one of them is that he has had it for three months. An examination of the cranial nerves failed to disclose any lesion which could with certainty be assigned to them. The movements of the eyes were quite free in all directions. There was no facial paralysis, and there did not appear to be any loss of sensation in the face. Mastication seemed normal, deglutition unimpaired, articulation distinct, movements of tongue good. He stated that his sight was failing, but an examination of the fundus on different occasions showed the absence of any pathological change. His hearing was defective, but this was attributed to a chronic purulent otitis media, with almost complete destruction of the membrana tympani of the right ear.

Upper Extremities.—The grasping power of each hand was quite good. Movements of left arm were not involved, but though he could readily flex his right arm, he had some difficulty in raising his hand to his head, and complained of pain in region of right shoulder on trying to do so. An attempt to ascertain the condition of sensation was unsatisfactory, owing to his contradictory statements.

Lower Extremities.—Power in the lower limbs was diminished, but he was able to draw them up when told to do so, or to raise them off the bed. The deficiency was more marked in the left than in the right. Ankle clonus could be obtained in either limb, but much more easily in the left, in which also the patellar reflex was somewhat more exaggerated than in the right. It was impossible in the lower limbs, just as in the upper, to draw any conclusions concerning his sensation. There was an effusion into his left knee-joint, which subsided considerably.

Bladder and Rectum.—There was no loss of control over these viscera. The urine had a specific gravity of 1022, gave a large precipitate of lithates, but contained no albumen. Constipation was troublesome, as the bowels generally acted only after enemata.

Nothing abnormal was detected by examination of the thoracic and abdominal organs.

On admission his pulse was 72, and respiration 28 per minute. The former, during the course of his illness, on only two occasions rose above 100; and the latter, except once, when it reached 42, varied between 20 and 30. The temperature was very irregular, ranging from 97° F. to 100° F., but not exceeding the latter number except on the evening of the day of his death, when it rose to 101° F.

On the 18th of November vomiting set in, and the emaciation became daily more evident.

The clinical note for 23rd of November is that the patient seems to be decidedly worse. He complains greatly of pain in his head; appears to be getting deafer and more stupid. Pulse (68) and respiration (42) show a great want of proportion. Vomiting more frequent than formerly. On one or two occasions he complained of pain over the right mastoid process, but there was no superficial œdema, redness, or even increased pain on pressure, when contrasted with the opposite side, to indicate any inflammatory process in the mastoid cells. As a rule, he slept well at night, though he woke up rather frequently, complaining that the pain in his head was so severe that he could not sleep. The stupor and emaciation became more marked day by day, till his death on the 26th of November, just fifteen days after his admission to hospital.

Post Mortem.—The head alone could be examined. On removing the calvaria, and slitting up the longitudinal sinus nothing abnormal was noticed. The dura mater was then incised and reflected so as to expose the pia and arachnoid, but there was an absence of any inflammatory mischief. The brain was then removed, and laid aside for a more detailed examination. The osseous roof of each middle ear was examined, but there was nothing on their cranial aspect suggesting any necrotic process. On removing these, both middle ears were laid open, and were found to contain a quantity of thick, greenish-yellow pus, which on the right side had made its way into the mastoid cells. The ossicles in each ear were somewhat rough, and appeared to be slightly necrosed. There was no indication of any septic phlebitis discovered. *Brain.*—On opening the brain in the ordinary method, the first incision through the left cerebral hemisphere disclosed the presence of two abscesses—one situated about the junction of the anterior and middle thirds, and the other in the posterior third. In the right cerebral hemisphere two abscesses occupying very similar situations were also found. The ventricles and basal ganglia seemed normal. The cerebellar hemispheres contained three abscesses, but the middle lobe was not diseased. A section through the pons showed an abscess situated in the tegmentum. It could, therefore, exercise any injurious effects on the pyramidal tracts only by pressure, and possibly we have in it an explanation of the

paresis of the lower limbs. It is, from the site of this abscess, difficult to understand how the motor nuclei of the fifth and sixth cranial nerves and the connection of the auditory with the superior olivary body could have escaped, but no indication of any implication of them was found during life, except possibly in the case of the latter, which may be to some degree responsible for his deafness. The abscesses, though varying in size from a very small pea to a hazel nut, had many features in common. They each contained similar greenish-yellow, thick pus, had soft and somewhat irregular edges, were encircled with a bright-red inflammatory ring, and showed no well-defined capsule. Sections presented, on microscopical examination, a cavity with an irregular, jagged border, which, owing to its infiltration with leucocytes, stained deeply. Some of the pus was stained and examined for micro-organisms, but with negative results. The much more delicate method, however, of ascertaining the presence of bacteria by inoculating a sterilised tube containing some nutrient medium met with more success. A minute quantity of pus was removed from one of the abscess cavities by means of a sterilised platinum needle, which was then drawn along the slanting surface of solidified agar, and after waiting for some weeks, keeping the tube at the ordinary room temperature, a yellow growth took place along the line of inoculation. This proved to be a micrococcus, but its exact nature has not yet been determined.

The methods of the formation of multiple abscesses of the brain are very interesting. Abscesses arising from local causes, of which injury and disease of the ear are the most potent factors, are almost invariably single. Of twenty-seven cases of abscess of the brain attributable to ear disease, collected by Gull and Sutton, there were only two in which more than one abscess was present; in one of these there were three abscesses in the cerebellum, and in the other, one in the cerebrum and one in the cerebellum.^a Morbid processes in distant parts of the body from which septic matter finds its way into the circulation are responsible for a large proportion of the cases in which the abscesses are multiple. Of fourteen cases of general pyæmia in which the brain was involved, in eight the foci of suppuration were numerous, and were scattered through different parts of the cerebrum. Secondary suppuration in general pyæmia would appear to be seated much less frequently in the brain than in some other organs, for out of 234 cases of cerebral abscess collected by Gowers^b there were only 9 cases of

^a Reynolds. *System of Medicine*. Vol. ii., art. "Abscess of the Brain."

^b Gowers. *Diseases of the Nervous System*. Vol. ii., p. 442.

pyæmic origin. There is, finally, a curious group of cases of cerebral abscess secondary to suppuration elsewhere, but which present none of the symptoms of pyæmia, and after death a most careful examination fails to disclose any metastatic abscesses except those in the brain. The limitation of the secondary suppuration to the brain is very remarkable and at present inexplicable. "These cases," writes Gowers, "are more numerous than those in which there is general pyæmia, and about ten per cent. of all cases of cerebral abscess are of this origin (25 of 234 cases.^a Fagge states that within a few years as many as six cases of this kind occurred at Guy's hospital.^b Gull was one of the first observers who directed attention to the fact that, in the majority of these cases, the primary suppuration is connected with the lung. Of eleven cases collected by him in which purulent deposits took place in the brain without the intervention of general pyæmia, in 7 the abscesses were multiple, the original focus having been connected with tubercular phthisis, acute pneumonia, simple bronchitis or bronchiectasis.

In the case under consideration at present, owing to the impossibility of obtaining a complete *post-mortem* examination, it is difficult to say with certainty of which of the two varieties it is an example. From the number of the abscesses (at least 8 were found), from their situation, scattered as they were through different parts of the brain not having any direct anatomical relationship with the ear disease or with each other, from the similarity in character which they presented there can be little doubt that they were secondary to suppuration elsewhere, and that the infection was conveyed by either the blood-vessels or lymphatics, most probably by the former. The only evidence in favour of general pyæmia is the effusion into the left knee, and the pain in the right shoulder. These are, however, explicable on other theories, and against the general pyæmic hypothesis we have the absence of cardiac phenomena, of rigors, profuse perspirations and very high temperatures, of an enlarged and tender spleen, of jaundice and albuminuria. The weight of evidence would appear, therefore, to point to this case as an example of the formation of multiple abscesses of the brain from a primary source of suppuration without the intervention of general pyæmia. The presence of the double purulent otorrhœa, and the absence of indication of

^a Gowers. Loc. cit.

^b Fagge. Practice of Medicine.

pus of old standing in any other part of his body render it probable that the former was the source of infection.

In conclusion, I wish to express my sincere thanks to Professor Finny, President of the Royal College of Physicians of Ireland, under whose care the patient was admitted to hospital, for permission to report this case, and to Messrs. Kennan, Montague Griffin, and Wynne, for the illustrations of the specimens which they kindly made.

ART. XI.—*Case of Mediastinal Lympho-Sarcoma.*^a By J. W. MOORE, M.D. Univ. Dubl., F.R.C.P.I.; Physician to the Meath Hospital.

THE differential diagnosis between an intra-thoracic tumour and a pulmonary consolidation or a pleural effusion must always be a matter of deepest interest to the physician, and of supreme moment to the patient. In the following case, certain elements presented themselves which rendered an accurate diagnosis more than ordinarily difficult. The case also illustrates the importance of making an examination after death in every case of fatal disease.

The patient had the advantage of advice from Mr. Daniel P. Coady, L.R.C.P. Edin., of Johnstown, county Kildare, before she came under my care at the Meath Hospital. It will be seen from the following extract of a letter from Mr. Coady that the nature of the case was more than suspected by him. He wrote to me:—"I could never make it out a case of phthisis, although it was often diagnosed as such. At last I began to think that my ears should be going wrong, so it was a great satisfaction to me to hear the result of the *post mortem*. I always suspected there should be some intra-thoracic tumour. The dulness was only in front; there was fulness in place of the usual sinking under the clavicle; the cutaneous veins were greatly distended; and there were some enlarged lymphatic glands in the subclavian and occipital triangles. The latter disappeared under iodide of potassium and iodide of iron."

CASE—Kate K., aged twenty-five, single, from the county Kildare, was admitted to Ward 18 of the Meath Hospital, under my care, on Thursday, November 26, 1891. She had been in delicate health for the previous eleven or twelve months, a troublesome dry cough and shortness of breath

^a Read before the Pathological Section of the Royal Academy of Medicine in Ireland on Friday, January 22, 1892.

being the chief symptoms since August, 1891. By her friends she was supposed to be in "consumption"—more particularly as she had been losing flesh for six months or so.

When I first saw her, on the morning of November 27, she was in great distress with her breathing, and sat bolt upright in bed. She was by no means extremely wasted, and the congested look about her face and eyes at once suggested that she was perhaps the subject of uncompensated valvular disease of the heart. Physical examination, however, failed to elicit any evidence of cardiac disease. Her pulse was 102; respirations, 38; temperature, 99·8°. The external jugular veins were permanently full.

Examination of the chest soon showed that an extensive pleural effusion existed on the right side. Thus, this side was fuller than the left, the ribs at the base were rather widely separated, there was relative inaction of the side. On percussion, very complete dulness was detected all over the front of the right chest, except in the acromial angle, where the sound was comparatively clear but high-pitched. The dulness transgressed the middle line above to the extent of one and a half to two inches. Posteriorly absolute dulness ruled all over the base, but in the interscapular and supra-scapular regions the percussion note was fairly clear, and breath sounds were audible. So far as I had gone in the examination, I believed we had to deal with an extensive right pleural effusion, but one thing puzzled me, and that was the slight displacement only to the left which the heart seemed to have undergone. The apex beat was in the nipple line.

Notwithstanding this fact, I considered that the evidence of pleural effusion was convincing, and the patient's great distress led me to advise thoracentesis. Accordingly, the same afternoon, Dr. Lennon aspirated and drew off 10 ounces of ordinary sero-fibrinous fluid. Next morning the girl was able to lie down, which she had not done for many weeks, and expressed herself much relieved. On proceeding to examine the chest, I was greatly surprised to find that there was practically no change in the area of dulness over the right apex in front, and that the jugular veins on both sides of the neck remained quite as full as they had been before thoracentesis.

For a time the patient felt better, but distress and orthopnoea gradually increased, so that on December 19, 1891, thoracentesis was again performed. Only two or three ounces of sero-fibrinous fluid were drawn off, the cannula apparently becoming plugged with a dense mass of coagulated fibrin. The fluid had a specific gravity of 1023, and was highly albuminous. The same evening her temperature ran up to 102·1°—the highest reached during the illness. There was again no change in the physical signs over the right apex. The infraclavicular region now began to bulge manifestly, the superficial veins were large,

and the skin looked puffy or œdematous, and pitted slightly on pressure. I thought that there must be either an encysted pleural effusion (probably an empyema) or an intra-thoracic tumour pressing on the innominate veins.

On December 26 the patient took a change for the worse, her temperature became subnormal, and she gradually sank and died on Tuesday, January 5, 1892. I saw her for the last time on New Year's Day. In my unavoidable absence Dr. Lennon kindly took charge of her, and after her death Dr. Craig made a careful, though partial, autopsy. To Dr. Craig I am indebted for the following note of the *post-mortem* appearances:—

Autopsy.—The thoracic cavity only was examined. On removing the skin over the sternum and costal cartilages, the subcutaneous tissue was found to be adherent and occupied by a new growth which had pushed its way through the pectoralis major and the intercostal muscle between the cartilages. On attempting to elevate the sternum, it was necessary to cut through a tumour which lay in the anterior mediastinum, and which was adherent to the bone. On the right side the pleural cavity was filled with fluid, the upper and lower lobes of the lung, but especially the latter, being compressed backwards and inwards against the spinal column so that no lung tissue was apparent. The fluid was straw-coloured and filled the pleura to the apex, while stretching across the cavity at intervals from above downwards were net-like partitions of elastic lymph which came away on the hand like cobwebs. The pleura was not thickened. On turning to the tumour which occupied the anterior mediastinum, it was found to be adherent to both lungs and growing far into the right one; it was also adherent to the pericardium, the inner surface of which was lined by the new growth. Nodules also lay between and were adherent to the pleura and pericardium. The growth extended up into the neck as far as the lower border of the larynx.

The pneumogastric nerve passed through the mass of the tumour, but was not flattened through pressure. The neoplasm, as is usual in such cases, grew round rather than into the nerve. Closely surrounding the trachea were many enormously enlarged glands, particularly on the right side. The œsophagus on the left was not in any way involved or compressed.

Dr. H. C. Earl, F.R.C.P.I., very kindly made a careful histological examination of the tumour, which was a typical hard lympho-sarcoma. He also favoured me with a beautiful stained section of the growth, which shows under the microscope numerous round cells and the stroma as well.

The new growth probably took its origin in the remains of the thymus gland.

Remarks.—It is to be regretted that circumstances forbade a more complete *post-mortem* examination. During life, however, there were no evidences of splenic or other visceral disease—certainly there was no pericarditis. The way in which the tumour grew round the trachea and pneumogastric nerve is noteworthy. In his recent work on the “Pathology of Mediastinal Tumours,”^a Dr. J. Lindsay Steven, of Glasgow, observes that perhaps the most characteristic feature of mediastinal lympho-sarcomata is the manner in which they mould themselves round the great tubular and vascular structures of the upper portion of the thoracic cavity. It is, indeed, true that the veins suffer from the encroachment of the tumour much more severely than the arteries. Dr. Steven also points out that sarcomata of the mediastinum seem to behave differently to aneurysm as regards their mode of involving the nerves. Aneurysm pushes the nerve trunk aside, crushes and destroys it by pressure. Sarcoma, on the other hand, appears to surround it much in the same way as it does a bronchus or an artery.

In my case, lastly, the singular freedom from inflammation shown by the involved pericardium is very noteworthy.

ACUTE YELLOW ATROPHY OF THE LIVER.

BURCKHARDT (*Correspond. Bl. für Schweizer Aertze*, Aug. 15, 1891) reports the case of a widow, thirty-two years old, who, after profound emotional depression, developed jaundice, followed in turn by delirium, with but slight elevation of temperature, death taking place in coma. The autopsy confirmed the diagnosis of acute yellow atrophy of the liver. Burckhardt takes occasion to controvert the view that acute yellow atrophy is always the result of phosphorus-poisoning. In the former the primary enlargement of the liver and the colicky pains of the latter are wanting, while the maniacal manifestations of acute atrophy are absent in phosphorus-poisoning. Examination has thus far failed to find phosphorus in the organism in acute yellow atrophy. From the absence of fever in, and the sporadic appearance of, acute atrophy, Burckhardt is unwilling to place it in the category of infectious diseases. He would rather ascribe the symptoms to the absorption of abnormal products developed in the course of parenchymatous inflammation of the liver induced by an unrecognised noxa.

^a The Pathology of Mediastinal Tumours, with special reference to Diagnosis. By John Lindsay Steven, M.D., Assistant Physician and Pathologist, Glasgow Royal Infirmary. London: H. K. Lewis. 1892. 8vo. Pp. 100.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Motherhood: a Book for Every Woman. By DR. ALICE KER, Hon. Medical Officer to the Wirral Hospital for Sick Children, and to the Birkenhead Lying-in Hospital. London: John Heywood. 1891. Pp. 128.

THE medical profession, we are sure, cannot fail to recognise the great want of a book brought out on such lines as this—a book comprising in popular form all the details necessary for every woman to know, in order that she may be enabled to secure her own health and that of her children, should she become a mother. Such a book, to be of practical value, should be written fully, yet simply, and its reasoning based on strictly sound physiological teaching. All appeals to morbid sentiment and scriptural references should be as scrupulously avoided as they are in the more abstruse works on medical subjects, unless, at all events, their truth is borne out by our present physiological knowledge. We quite agree with the writer of the preface as to the necessity for plainness of speech in these matters, but we cannot think that an apology for it is necessary when introducing such a book to the public. They are the best judges of its value, and cannot misunderstand it when put before them in such a serious light. Unfortunately, in the present work our ideal is far from being realised, for appeals to sentiment and scripture are unnecessarily frequent—sound physiological and medical teaching being on several occasions, apparently, in the mind of the writer of very secondary importance when compared with them.

The book, after an introduction, which contains nothing of practical value, opens with a chapter on “Commencing Womanhood,” in which, besides other useful information, the author points out how often the habit of alcoholism originates in the practice of taking stimulants to allay pain during menstruation, and concludes by showing how pernicious is the custom of leaving without skilled

treatment young unmarried girls who are suffering from ailments clearly pointing to some lesion of the genital organs. We quite endorse this opinion, for we fail to see any reason why an unmarried woman should be treated differently from any other, or be allowed to remain untreated for want of local thorough examination. We regret that this antiquated and unscientific prejudice unfortunately pervades but too prominently even the most modern of our English gynæcological text-books.

In the second chapter Matrimony is discussed, and the necessity for parents or guardians to explain fully to every young woman entering into matrimony the duties and relations she will be expected to undertake. In the matter of sexual intercourse we quite agree with Dr. Ker that the wife should have perfect control over her own person within legal limits; but we cannot agree with her when she says that the choice of *time* and *frequency* is the right of the woman, as this would be giving her control of her husband's person also. We certainly think with her that the abuse of this relation is but too frequent in married life; at the same time we fear that the author does not recognise sufficiently the dangerous consequences that might result from a continence enforced by either party. While cordially uniting in condemning the use of artificial checks to conception, we would be glad to hear from the author what medical or physiological grounds she has for stating that "there is not one of them which is not liable to injure the health of either husband or wife:" and further, "they are often ineffectual in compassing the end for which they are employed, and, in that case, the effect upon the child must be anything but beneficial." This latter statement is truly ludicrous. The bustle of the fashionable marriage and the evils of the honeymoon are rightly censured. This chapter concludes by "an allusion to cases in which marriage is undesirable." Idiocy, consumption, and intermarriage with relations, are each treated of in turn, but all forms of venereal disease are unfortunately quite ignored.

The third chapter is devoted to pregnancy and miscarriage. In speaking of dress, such as should be worn during pregnancy, the author states, p. 35:—"If the breasts be prevented by the clothing from expanding freely, they will be subject to the unsightly cracks and lines under the skin, which some writers describe as always occurring during pregnancy." And again, in speaking of the lineæ albicantes, p. 39: "The unsightly lines and the shrivelled appearance which childbearing generally leaves on the skin of the abdomen,

are the result of the compressions of the skin between the clothing and the enlarged womb, and they do not occur in women who have dressed very loosely. They also depend, to some extent, upon tight bandaging after delivery." We would be indeed pleased to hear whence these theories have been evolved, and what can be brought forward in support of them by their ingenious originator. In the section on miscarriage the obsolete notions about the "*habit of miscarrying*" are put prominently forward, while the most probable causes of abortion are given but slight notice, or are altogether omitted.

Childbirth is the subject treated in the fourth chapter, which, we regret to say, shows but too plainly a complete absence of acquaintance with the fundamental principles of modern obstetrics. Air infection is given a most exalted place, whereas direct infection from manipulation of the genitals is not even hinted at. On p. 49 we are told that "the carpets should be taken up and thoroughly beaten, the curtains well shaken, and all the woodwork washed with some disinfectant, such as carbolic acid." Compare this statement with the directions on pp. 53 and 54: "It is of great service to apply hot fomentations, in the form of a sponge or cloth wrung out of water, as hot as can be borne, and kept constantly renewed on the parts during all the rest of the time. The opening should be smeared plentifully with vaseline, *washed lard, or some such oily substance.*" Here no disinfection of the hands of the attendant or the patient's external genitals is mentioned, though we are told how necessary is the disinfection of the woodwork, &c., of the room. The use of *sponges, wet clothes*, and, to crown all, *washed lard, or some such oily substance*, is advised. Truly we had hoped that such articles as these had been long since banished altogether from modern obstetric practice. It is, indeed, lamentable to find advice so flagrantly transgressing the principle of asepsis in any recent publication on midwifery. Again, we are first told that "the best bed of all" for the delivery is a "wire-wove one"—a statement contrary to any teaching we have hitherto received. Further on the authoress says: "Perhaps the most desirable bed, however, is a well-filled hair mattress." Now we would be glad to know which the reader is expected to choose—(a) the one which is best of all, or (b) the most desirable bed. We would have thought that "the best bed of all" would be "the most desirable bed." While warning her readers against the evils of tight bandaging after delivery, Dr. Ker leans towards the popular error of believing

that women will not recover their slimness of figure if this is omitted.

The next chapter—care of the infant—is a decided improvement on the previous one; but we think that it is rather premature to allow an infant to have his first outing the seventh day after birth. Lactation is next discussed. The authoress here states, p. 74: “The milk comes freely into the breasts about the third day, sometimes accompanied by a certain amount of discomfort and feverishness.” Had Dr. Ker consulted some modern work on obstetrics she would find that normal lactation sets in unaccompanied by fever, and that so-called milk-fever is due to some form of septic trouble. We think it not unlikely that this feverishness would be found less frequent were the authoress to join with us in banishing the practice, which she now advocates, of applying hot fomentations, with a sponge, &c., and smearing the opening with washed lard or some such oily substance. On p. 78 we find that “cases have been reported in which children, suckled immediately after a fit of anger on the part of the mother, have died in convulsions, from the poisonous effects of the outbreak on the milk.” We must admit that we are more than sceptical regarding the ætiology of the convulsions in these cases, for we cannot see how it can be argued that they occurred *propter hoc* rather than *post hoc*. In treating the subject of weaning and handfeeding, Dr. Ker points out the necessity of boiling the cow’s milk used for feeding infants in order to sterilise it, and advocates the employment of the boat-shaped bottle. She describes the method of preparing Franklands’ artificial human milk, while the more usual methods for preparing milk for infant feeding are given but little attention. The necessity for detailed directions as to the amount and frequency of the meals seems to be quite ignored.

In the next chapter—on infancy and childhood—we find stated that “a vaccination shield is useful if the child has to be given over to the care of inexperienced nurses, but its disadvantage is that when it becomes soiled it may poison the arm, and so do harm instead of good.” We fail to follow the logic of this sentence, for surely, when it has such a disadvantage, it is not when the child “has to be given over to the care of inexperienced nurses” that it ought to be used. We do not think so, and believe that its use is questionable under any circumstances—otherwise this chapter, as well as the following one, is good. Lastly, advanced womanhood is discussed. This chapter is very unequally written;

some parts, such as directions about diet, attention to cleanliness and abstention from stimulants, being well and clearly laid down, but we regret to find it marred by such a statement as—"Actual disease of the womb is not likely to occur at this juncture unless it has been present before." The book closes with a not unnecessary exhortation as to the advantages of cleanliness during menstruation. We have criticised numerous points in this work, but we do so because we think that many of them, were they to go uncorrected before the public, who are unable to judge in such matters for themselves, might lead to serious results. At the same time we hope and think that when it has been thoroughly revised and all errors corrected, this little book will fill a gap where it is much needed.

Handbook of Materia Medica, Pharmacy, and Therapeutics. including the Physiological Action of Drugs, the special Therapeutics of Disease, Official and Practical Pharmacy, and Minute Directions for Prescription Writing. By SAM'L. O. L. POTTER, A.M., M.D., M.R.C.P. (Lond.) Third Edition. Revised. Philadelphia: P. Blakiston, Son and Co. 1891. Pp. 767.

THE title of this portly volume suggests its encyclopædic nature, but a glance at the table of contents shows that far more is treated of than even the title would cover; and indeed many of the sections might with advantage be omitted from a work on *Materia Medica*, Pharmacy, and Therapeutics. For example: "Tables of Differential Diagnosis," "Signs of Labour," "Diameters of the Fœtal Skull at Term," and "Ethics, the Hippocratic Oath, &c.," must be looked upon as padding.

The chief portions of the work are as follows:—I. Classification of medicines according to their actions. II. *Materia medica*, beginning with *Abrus* (which does not seem to have fallen as much out of use in America as over here) and ending with *Zingiber*. III. Pharmacy and prescription writing, including sections on such subjects as "Constituents of Vegetable Drugs," "Prescription Blanks," "Approximate or Domestic Measures." IV. Special Therapeutics of all Diseases, from Abdominal Plethora to Yellow Fever (curiously enough, Epidemic Influenza is omitted from an otherwise full list). Two hundred and ten pages are given to this section; there are plenty of references and some prescriptions. V. An Appendix, containing all sorts of odds and

ends, from a capital list of Latin terms to the treatment of poisoning.

There is an immense amount of valuable information in the book, and everything is done by arrangement, type, cross references, and a most ingenious system of labelled thumb-holes in the margin, to make reference rapid. It is, however, a pity to omit all Greek words, merely giving their phonetic equivalents in English letters. The following, for example, have a somewhat strange look:—Aphrohdeetay—Venus; Pffleggo—I burn; Deeouraysis—Urination. It would not take up much room to let the real Greek modestly repose in brackets as a corrective to its phonetic equivalent.

The Pathological Histology of Bronchial Affections, Pneumonia and Fibroid Pneumonia: An original Investigation. By A. G. AULD, M.D. London: Churchill. 1891. Pp. 207.

THIS work is divided into two parts. The first treats of the normal anatomy of the bronchi, acute and chronic bronchitis, bronchiectasis, and of bronchial asthma. The second part deals with the lungs, their normal anatomy, and the different forms of pneumonia. In the account of the normal anatomy of the bronchi the author adopts the results of Waters, who holds that the blood of both the pulmonary and bronchial arteries is returned in common by the pulmonary veins—the bronchial veins carrying away only the blood from the structures at the root of the lung. He denies the statement of Klein that connective-tissue cells project into the epithelium, and holds that the cells seen by Klein are merely growing epithelial cells. He holds that mucous corpuscles may originate from epithelial cells by division, and finds that the remarkable basement membrane of the human bronchi is not really homogeneous, but contains nuclei, and is composed of excessively fine longitudinally-disposed fibrils.

It would be impossible for us in the space at our disposal to follow Dr. Auld through his description of the pathological changes of the bronchi. While the investigation is, no doubt, painstaking and ingenious, it appears to us that it is marred by an over self-confidence, amounting often to bumptiousness, a too great contempt for the work of other pathologists when they differ from him, and a want of distinction between demonstration

and inference. Thus we have the assertion that pus cells may be formed from epithelium, connective-tissue cells, and that even smooth muscular fibres proliferate, although whether pus cells or connective-tissue cells result from them is not quite clear. These assertions we are called on to credit on the bare statement of the writer, without the support of drawings or other evidence. We know how often such statements have been made before, and how easy it is to interpret microscopical appearances so as to make them accord with such views; but we know also that the results of experimental work show that such an origin of leucocytes is by no means so common an event as was formerly supposed. It is true there are nine illustrations in the book, two of which are repeated; but they are of a rough semi-diagrammatic nature, and utterly inadequate to establish any point in minute anatomy.

In the chapter on Broncho-Pneumonia the following "grand distinction" between acute broncho-pneumonia and acute lobar pneumonia is laid down:—In both there is a fibrinous exudation. "But in the case of acute broncho-pneumonia the fixed connective-tissue cells of the alveolar walls invariably germinate, and give rise to a great crowd of young cells, which soon fill up the alveolar cavities. No such germination occurs in the vast majority of cases of ordinary pneumonia. When it does occur it is exceptional, and gives rise to grave consequences."

The two last chapters, on Fibroid Pneumonia, are interesting. This condition, in which the lung becomes indurated, without much diminution in size and without dilatation of the bronchi, may occur primarily or as a sequel to acute lobar pneumonia. It is due to ingrowth of fibrous tissue into the alveoli and an organisation of the fibrinous exudation. These ingrowths are pedunculated and vascular in the early stages. Subsequently the vessels become to a great degree obliterated, and necrotic changes may result.

The author, as we have said, treats those who differ from him with but little respect. We read that Cohnheim is blindly enthusiastic; the views of Rindfleisch and Buhl are a pure travesty of the whole subject of inflammation; Professor Hamilton brings forward the extraordinary and preposterous theory; the Germans have got into the habit of using the stupid word acute croupous pneumonia—and so on.

Dr. Auld's own use of words is sometimes original and peculiar.

Thus we meet with such terms as "sthenicity," "amassment," "demarcatable," "hecticity," &c.

Although we are far from agreeing with the writer in many of his views, we must admit that his work shows evidence of labour and ability, and it will, no doubt, occupy a place in the literature of the subject with which it deals.

Collected Contributions on Digestion and Diet. By SIR WILLIAM ROBERTS, M.D., F.R.S.; formerly Physician to the Manchester Royal Infirmary, and Professor of Medicine in the Victoria University. London: Smith, Elder & Co. 1891. Pp. 261.

THIS book consists mainly of a reprint of two well-known works of Sir W. Roberts—viz., the Lumleian Lectures "On the Digestive Ferments and Artificially Digested Food," and the lectures delivered at Owens College in 1885, "On Dietetics and Dyspepsia." To these have been added some other papers on kindred subjects, published at various times.

In the present volume these lectures and papers are not arranged chronologically, but are classified according to their subjects. The book is divided into Four Sections, of which the first treats of Digestion. The digestive ferments and their action on the various classes of alimentary principles are described, and there is a paper on the estimation of the activity of pancreatic extracts. In Section II. Dietetics are discussed, the effects of food-accessories, tea, alcohol, beef-tea, &c., on salivary, peptic, and pancreatic digestion are described with much minuteness and accuracy, and the last chapter contains some very valuable practical hints on the feeding of patients. Section III. treats of the feeding of the sick, and of the use of artificially digested foods. Full details are given as to the mode of peptonising many articles of food. In Section IV. Sir W. Roberts sets forth his views on the treatment of Acid Dyspepsia by alkalies and by provoking a flow of saliva.

A good part of the contents of this volume has been already reviewed in this journal. To this we need not now allude particularly; there are, however, some papers which, up to the present, have only been published in various journals. We would especially call attention to the address "On some Practical Points in Dietetics," delivered in 1890 before the Manchester Medical Society; in it the author's breadth of view and sound common sense are eminently conspicuous. In the case of that very

numerous class of patients who are not very seriously ill, and who are able to attend to their daily avocations, but who for some reason or other ask their doctor what they ought to eat and to avoid, there being no very special indications for dietetic treatment, Sir W. Roberts calls attention to the eminently diverse and contradictory directions given by medical men. On these cases the author's remarks are excellent—"There is, I think, one very good rule in regard to the regulation of the diet in cases in which there are no special indications to fulfil, and that is to put two questions to the patient when he inquires whether he may take this or that article of food—namely, Do you like it? and Does it agree with you? If the answer be in the affirmative, there is no intelligible reason why the use of that article should not be sanctioned. Such a rule is so plain and simple, and so obviously consonant with good sense, that it might scarcely appear worth while, or even dignified, to make formal mention of it, and I would not have done so had I not been satisfied from actual experience that it is constantly violated." The remarks, too, on the gradual formation of national dietaries by a process of the survival of the fittest are well worth reading.

There is a charm and clearness about all Sir W. Roberts writes that make it a pleasure, as well as a profit, to read this volume. We warmly recommend it to every one of our readers.

The Johns Hopkins Hospital Reports. Vol. II. Nos. 7, 8, 9. *Report in Pathology.*—1. *Amœbic Dysentery.* By WILLIAM T. COUNCILMAN, M.D., and HENRI A. LAFLEUR, M.D. Baltimore. 1891. Pp. 152.

THAT dysentery is occasionally caused not by bacterial parasites, but by the invasion of minute animal organisms belonging to the amœba form, has been known for some time, chiefly from the writings of Lösch and Kartulis. Amœbæ have also been found by Koch and others in cases of dysentery, and by Cunningham in cholera.

In the exhaustive monograph before us the authors record the particulars of fifteen cases of dysentery caused by amœbæ, as observed by them in Baltimore. Founded on the clinical history of these cases, and on the *post mortem* appearances found in those of them which terminated fatally, and from a most painstaking study of the whole literature of dysentery, Drs. Councilman and

Lafleur give the most complete and exact account of this remarkable disease which has yet appeared. The text is illustrated by seven large folded plates, containing numerous beautifully-executed drawings illustrating the pathological changes met with in the intestines, liver, and lungs.

The following are the conclusions at which the authors arrive as a result of the work which has been done :—

“ 1. Amœbic dysentery is a form of dysentery which, ætiologically, clinically and anatomically, should be regarded as a distinct disease.

“ 2. We would consider that—

“ (a). The amœba dysenteriae has been shown to be the causative agent from its constant presence in the stools and in the anatomical lesions, and from the inoculation experiments of Kartulis.

“ (b). Clinically the disease is characterised by the presence of amœbæ in the stools, which, in addition, present physical characters different from those seen in the stools of other forms of dysentery, as noted above; by a variable onset, course, and duration, of which the special features are periods of intermission alternating with exacerbations; and by a marked tendency to chronicity, with the production of a greater or less degree of anæmia.

“ (c). Anatomically the disease is characterised by the production of ulcers in the colon which generally differ from those found in any other form of dysentery. The ulceration is produced by infiltration of the submucous tissue and necrosis of the overlying mucous membrane, the ulcer, in consequence, having the undermined form. Frequently, in addition to the ulcers, there is infiltration of the submucous tissue without ulceration. In all of these lesions, unless complicated by the action of bacteria, there is absence of the products of purulent inflammation.

“ 3. Abscess of the liver with or without involvement of the lung is a frequent complication, much more so than in any other form of dysentery. The involvement of the lung may early follow hepatic involvement, and be detected by the occurrence of amœbæ in the sputum before there is evidence of liver abscess. These abscesses differ in their anatomical features from those produced by other causes. The chief difference is found in the absence of purulent inflammation, the abscess being caused by necrosis, softening and liquefaction of the tissue. In these liver abscesses the amœbæ are not associated with any other organisms.

“ 4. The disease is widely distributed, and is found in most countries in Europe, in most parts of the United States, and in the tropics everywhere.

“ 5. This is the form of dysentery which has been called tropical dysentery.’

PART III.

SPECIAL REPORTS.

REPORT ON PRACTICE OF MEDICINE.

By HENRY T. BEWLEY, M.D., Univ. Dubl., F.R.C.P.I.; Assistant Physician to the Adelaide Hospital, Dublin.

BROMOFORM IN WHOOPING COUGH.

LOWENTHAL treated 100 children with bromoform (C H Br_3). The youngest was eight weeks old, and the oldest seven years. The children were cured, and the treatment consequently stopped in from 2 to 4 weeks. In a few cases the children were noticed to be tired and sleepy during the treatment. In one case the symptoms produced by the bromoform were more serious, the child falling into a very deep sleep or coma. It, however, recovered after receiving injections of ether.

The doses employed were as follows:—For children up to one year old, 2–4 drops three times daily; between two and four years, 3–4 drops 3 or 4 times a day; from four to eight years, 5 drops 3 or 4 times a day. In all 10–15 grams. ($2\frac{1}{2}$ –4 drams.) were given in most cases; in none more than 20 grams. (5 drams.). Bromoform is a clear transparent fluid; it must be kept in the dark; otherwise it becomes red and thick.—*Berliner klin. Wochenschrift*, 1890, No. 23.

DEATH AFTER A SMALL DOSE OF SALOL.

A woman, aged thirty, was suffering from indigestion. In order to investigate the motor power of the stomach Ewald's method was employed: 15 grains of salol were given. In a short time the woman became restless; then unconscious; pupils dilated; incessant vomiting; pulse irregular. The urine was dark-coloured, and contained salicylic acid. She died 12 hours after taking the salol. *Post-mortem* examination showed hæmorrhagic gastritis and enteritis; a healed gastric ulcer, and chronic endometritis. The case shows the need of care in using salol, and the necessity of con-

sidering the general condition of the patient and the state of the kidneys. If a patient to whom salol has been given shows any unusual susceptibility to carbolic acid, sulphates should be at once given: sulphate of sodium is about the best.—F. Chlapowski, *Therap. Monatshft.*, 1891, p. 213.

A NEW METHOD OF ADMINISTERING SULPHONAL.

The patient is directed to dissolve the drug in about 6 or 7 ozs. of boiling water immediately before going to bed. The sulphonal dissolves fairly rapidly, especially if it be kept stirred. Then the patient cautiously adds cold water until the solution is cool enough to drink; or else the solution can be let stand until it is cool enough. In either case the medicine is to be taken as hot as possible. The taste is somewhat bitter: to avoid this a teaspoonful of some flavouring syrup may be added.

If the drug is used in this way, sleep is said to come on almost at once, and to be more heavy and sounder than when it is given in the ordinary method. By next day there is no sleepiness or other unpleasant after-effect.—D. D. Stewart, *Med. News*, No. 5, 1891.

FŒTID PLEURAL EFFUSIONS.

Dr. Alexander James divides these, from a pathological point of view, into three classes:—

(1.) Effusions, fœtid or stinking, because associated with, and resulting from, gangrene of the lung and superjacent pleura. The fact of an effusion belonging to this class is often shown by the discharge of a necrosed piece of lung-tissue, through the chest-wall opening after paracentesis.

(2.) Effusions which become fœtid as the result of the access of air, or of putrid materials—*i.e.*, of putrefactive organisms. Instances of this class are met with when a dirty aspirating needle is introduced into an effusion, when an empyema bursts through the chest-wall, or into a bronchial tube, when a lung abscess or hydatid ruptures, or when a tubercular pneumothorax occurs; in the last case, however, the effusion rarely becomes fœtid, there probably being an antagonism between tubercle bacilli and putrefactive organisms. This antagonism is shown by the fact that (*a*) tubercular cavities in the lung rarely become fœtid, while other cavities usually do; and (*b*), in cases of tubercular phthisis in which, after the formation of cavities a

fœtid spit and fœtid odour of breath show themselves, very striking amelioration is sometimes noticed in the symptoms.

Other causes of fœtid effusions belonging to this class are: ruptures into the pleural cavity of an œsophagus as the result of malignant disease, and ruptures into the pleural cavity from the abdomen.

(3.) Effusions which are fœtid, but in which by symptoms, by *post-mortem* examination, or by both combined, the existence on the one hand of gangrene of the lung, and on the other of means of access of air or putrid material, cannot with certainty be demonstrated. In these cases Dr. James believes the putrefactive organisms to have been conveyed by the blood to the pleura. "There can," he says, "I think, be no doubt that normally the various tissues contain micro-organisms, some of them putrefactive; but that, owing to the phagocytic action of the normal tissues, their effects for harm are prevented. Given, however, some exhausting condition—as, for example, convalescence from acute disease, or chronic alcoholism—this phagocytic action will of course be lessened, and to this let an acute pleuritic process be superadded, it is not unreasonable to believe that in connection with the inflamed tissue these germs may be able to secure for themselves a nidus for their growth and development."

With regard to treatment, Dr. James recommends free drainage through an opening made in the 7th or 8th interspace, somewhere between the posterior axillary and scapular lines. He advises that a piece of a rib should be resected in every case, and also—though he does not insist on this—that the pleural cavity should be gently irrigated with warm boracic lotion, or some similar solution, as long as fœtor continues.—*Edinburgh Med. Jour.*, July, 1891.

THE NUMBER OF TUBERCLE BACILLI PRESENT IN SPUTUM.

Dr. G. H. F. Nuttall, of Johns Hopkins' University, has estimated, by a new method, the number of bacilli present in the sputum of patients who were undergoing the Koch treatment. In one case the patient expectorated 2,000,000,000 bacilli during the 24 hours before the inoculations; after the inoculations the number rose to between 3,000,000,000 and 4,000,000,000. After the inoculations ceased the number fell to what it had been originally. In another case the number of bacilli varied between 20,000,000 and 165,000,000 on the days preceding the Koch

inoculations, rose irregularly to 283,000,000 after the first inoculation, and fell to 265,000 by the time the sixteenth inoculation had been reached. In other cases not undergoing the Koch treatment, the number of bacilli present was found to vary greatly from day to day, in one case rising within a short time from 300,000,000 to over 4,000,000,000.—*Johns Hopkins' Hospital Bulletin*, quoted in *New York Med. Jour.*, June 20, 1891.

A CASE OF LANDRY'S PARALYSIS.

This disease is so rare, and at the same time so interesting on account of the obscurity of its pathology, that we reproduce the history of a well-marked case, observed by Dr. Neglein, of Altenessen.—*Deutsche Medizinal-Zeitung*, June 25, 1891, p. 589.

A fairly-strong and healthy man, aged fifty years, was attacked on May 9th with violent diarrhœa, passing 20–30 liquid stools daily, and suffering from tenesmus. After several days the diarrhœa lessened, but on May 13th a doctor was sent for, for the first time, on account of the patient's excessive weakness. Treatment—opium, tannin, and tincture of rhubarb; improvement followed. On the morning of the 16th patient noticed his arms were very weak. This weakness increased so rapidly that on the following day he could hardly raise them, on the 18th they were totally paralysed—the backs of the hands slightly œdematous. On the 17th weakness of the legs commenced, and next day (18th) had increased so rapidly that the only motion patient was able to make with his legs was a slight movement of one of the toes of his right foot. On the same day the muscles of the back became paralysed, and gradually swallowing grew more and more difficult, so that after each solid morsel patient was obliged to take a drink. On the 19th he had to be fed with a tube. General condition good; appetite good; no pain or tenderness; no fever; mind perfectly clear. On May 20th strength failed considerably, and on the afternoon of the 21st death occurred suddenly. It was not caused by paralysis of the diaphragm, or by an attack of choking; consciousness perfect to the end.

There was no alteration whatever in the sensibility of the skin. Abdominal reflex absent; cremasteric reflex badly marked; deep reflexes absent. Bladder and rectum acted normally; spleen considerably swollen. Temperature normal till the last day, when it rose to 102.6° F. Urine deposited abundant sediment of urates; autopsy was not permitted.

The course of the disease resembled that of an illness produced by some poison. Neglein suggests that possibly poisonous substances (ptomaines) may have caused the diarrhoea, and subsequently, being absorbed, may have fatally affected the spinal cord.

ACUTE ASCENDING (LANDRY'S) PARALYSIS.

Dr. Hun, of New York, records another case of this disease. A man, aged forty-five, had suffered occasionally from pains and stiffness in his legs, following an injury to his back in 1886. April 11th, 1890—some weakness in legs. April 15th—complete paralysis of legs; some weakness of arms. April 18th—slight left facial palsy, diplopia, and right ptosis; could not grasp at all with right hand, and but very feebly with left. Reflexes, superficial and deep, absent; bladder and rectum inactive. No muscular tenderness; sensation perfect; muscles reacted well to faradic current. April 23rd—became deaf, then blind, and a quarter of an hour later comatose. Died soon after of respiratory failure.

Brain and spinal cord at the autopsy seemed healthy. A very thorough microscopical examination showed a slight cerebral and spinal meningitis, an infiltration of the walls of some of the veins, and a degeneration or neuritis of some of the anterior roots of the cauda equina; the nervous system was, in other respects, normal. Bacteriological investigation gave negative results. In short, no pathological cause was found for the symptoms during life.

Hun cannot agree with the attempt that has been made to identify Landry's paralysis with multiple neuritis. In the cases in which peripheral neuritis has been found after death, bulbar symptoms have been absent, or only slightly developed during life, and there has been a decided disturbance of sensation, a paralysis of the sphincters, or the reaction of degeneration in the muscles, with tenderness on pressure—symptoms which form no part of Landry's paralysis. He looks on the disease as a clinical entity, for which no corresponding lesion has been found. The change is more of a chemical than of an anatomical character. The tendency is to regard it as a ptomain poisoning.—*New York Med. Jour.*, May 30, 1891, and *Med. Chronicle*, July, 1891.

A NEW METHOD OF ASCERTAINING THE SIZE OF THE LIVER.

The difficulties in many cases of finding out exactly where the lower edge of the liver is are known to all. Tenderness in the region of the liver, ascites, and tympanitic distension of the

abdomen, all render physical examination uncertain in the results it affords. Dr. C. Verstraeten, Ghent, has without any difficulty obtained accurate results by the following methods:—While the patient sits up, or, still better, lies down, with the abdominal muscles relaxed, he listens with a stethoscope to the heart-sound. He applies the stethoscope first to the apex of the heart, then he examines with it the patient's right side, applying the stethoscope in the sternal, mammary, and mid-axillary lines, and gradually proceeding downwards. As far as the liver extends the heart-sounds are well heard, and do not grow much weaker. Immediately however, when the stethoscope passes beyond the lower edge of the liver the sounds are no longer heard. In this way the size of the liver downwards can be determined exactly.

The apex of the heart is situated close to the left lobe of the liver, and the structure of this organ is homogeneous, and conducts sound well. It would be quite possible to ascertain the upper limit of the liver by this method; but Verstraeten says that auscultation and percussion of the lungs give clearer results.

When the heart-sounds are exceedingly weak this method is not available. During the examination the abdominal muscles must be relaxed; if they are rigid the sound is conducted by the contracted muscles, and the loss of sound which ought to be found at the edge of the liver does not occur.

Verstraeten has not had an opportunity of experimenting with this method in cases of large cancerous tumours and abscesses of the liver, and cannot definitely say if the heart-sounds are heard well in these cases.—*Centralblatt f. klin. Medicin*, 1891, p. 161.

THE TREATMENT OF DYSENTERY BY MEANS OF CORROSIVE SUBLIMATE ENEMATA.

In the military hospital in Oran there were 200 cases of true dysentery, 53 of which were treated in the following manner:—2 or 3 injections were given daily of a warm solution of corrosive sublimate, strength 1 in 5,000; the injections were not retained more than ten minutes. If the patient was suffering from a very mild form of the disease, his stools being normal, except for the presence of a little mucus and some streaks of blood, only one enema was given daily. In cases of acute dysentery the motions became much less numerous after the first day of treatment, and generally the mucus in the stools disappeared after 3 or 4 days; tenesmus and pain diminished rapidly. If the anus was very

painful and tender, it was painted with cocaïn before the enema was given. If there were exceedingly severe pains (colic) some laudanum was at first added to the enema. The diarrhœa in many cases ceased so completely that purgatives became necessary. No case showed any salivation or other sign of mercurial poisoning.—G. Lemoine. *Bullet. Général de Thérap.*, 1890, and *Cbt. f. klin. Med.*, 1891, No. 11.

THE PATHOLOGY OF LEAD PARALYSIS.

It has not yet been satisfactorily decided whether lead paralysis is primarily an affection of the central nervous system or of the peripheral nerves. Most cases in which have been carefully examined have been of old standing, and complicated by secondary changes.

Eichhorst believes that in all cases the primary lesion is in the nerves and muscles, and that if the case lasts long enough secondary changes may occur in the spinal cord. It is, however, he says, as yet impossible to decide whether the nerves are affected first, and the muscles subsequently, or *vice versâ*; or whether both structures are simultaneously attacked by the poison.

In one recent case of drop-wrist he found œdema and swelling of brain, chronic arachnitis of brain and cord, and adhesions of the spinal dura and pia. The only nerves diseased were the musculo-spirals; in these the sheath of Schwann contained a large number of nuclei; with the exception of these they were in some places empty; in others there were broken-up fragments of myelin and of axis-cylinders. There was considerable thickening of the blood-vessels of the nerve-trunks. The spinal cord and brain, when examined microscopically, appeared normal.—*Virchow's Archiv.*, Bd. 120, Hft. 2, and *Cbt. f. klin. Med.*, No. 25, 1891.

NAPHTHALINE AS A VERMIFUGE.

Dr. Mirovitch of Biélsk considers naphthaline to be the best remedy for expelling tape-worms. Its action is certain, and there is no danger of its producing any poisonous effects, seeing that it is hardly absorbed to any appreciable extent by the gastro-intestinal mucous membrane. The dose for adults is 15 grains, given when the stomach is empty, and followed by a large dose of castor oil. Children may take from 4 to 8 grains. For two days before the drug is given the patient is to eat freely of salted, acid, and spiced foods. In all Dr. Mirovitch's cases one dose succeeded in

expelling the tape-worm, head included, even in cases in which other drugs had failed.

He also found the drug useful in the treatment of ascarides.—*Mercredi Médical*, May 20, 1891, and *New York Med. Jour.*, Aug. 15, 1891.

ON THE INFLUENCE OF ALCOHOL ON STOMACH DIGESTION.

R. Wolffhardt carried out, under Pentzoldt's and Fleischer's directions, a number of experiments on men, with the following results :—

1. Absolute alcohol delays the digestion of meat and starchy food, lengthening the process by about 30–40 minutes.

2. 2 ozs. of brandy containing 50 per cent. alcohol delayed the digestion of starches, but on the contrary hastened that of meat if taken at the time of eating; if, however, the brandy was drunk while digestion was going on, the effect was to prolong the process.

3. 3 ozs. of brandy taken in 3 doses of 1 oz. each during digestion, prolong that process by about 40–50 minutes.

4. 1 to 1½ ozs. of brandy shortens the process of digestion by 30–35 minutes.

5. Both red or white wines, whether taken before, or with a meal, help digestion.—*Münsch med. Wochenschrift*, 1890, No. 35.

CUTANEOUS TUBERCULOSIS BY DIRECT INOCULATION.

An interesting case showing the virulence of phthisical sputum is recorded by Dubreuilh and Auché. A healthy servant girl, twenty-three years old, was engaged in September, 1888, to attend a consumptive lady, and to wash her clothes. The lady had abundant sputum which she deposited in her handkerchief. She died on October 26th. Two days after the servant remarked a painful red swelling on the left hand. Soon the axillary glands suppurated, and a number of tubercular swellings developed about the right shoulder. A right-sided pleurisy also developed after some time. In April, 1889, all the diseased spots were scraped and cauterised, and healed with the exception of a sinus in the axilla. In the end of 1889 the girl seemed well, except for this sinus, and for some doubtful signs in the lungs.

The fragments removed were examined, and the tubercular nature of the disease clearly established.

This case adds one to the already numerous warnings that have

been published to look on phthisical sputum as a highly dangerous substance.—*Archiv de Méd. Expér.*, 1890, No. 5.

THE TREATMENT OF DIABETIC COMA.

R. Schmitz (Neuenahr) contributes to the *Berliner klin. Wochenschrift*, 1890, No. 40, a paper on this subject. The characteristic signs of this condition are sleepiness, increasing to stupor, accompanied by violent colic and high temperature. Schmitz does not believe that this state is due to "Acetonæmia," but holds that it is due to intoxication by the products of intestinal decomposition. He gives strong purgatives; under their influence abundant black stinking matter is passed. In four cases this treatment resulted in recovery.

ON EMPHYSEMA OF THE LUNGS.

In two papers on this subject Liebermeister first refers to the theories of the origin of this affection; there are three theories, two of which are mechanical in nature (the inspiratory and the expiratory), and the third attributes the lesion to histological changes in the lungs. Liebermeister believes all three views to be correct; these various causes act in different cases either singly or in combination. The mechanical theories explain sufficiently the dilatation of the alveoli; but they do not explain the permanence of this condition. On the other hand, the histological theory alone is insufficient; it requires as well a mechanical cause, which is supplied by the "dry catarrh" and its results. A predisposition to emphysema may be hereditary, and possibly may consist in deficient development of the elastic tissue in the lung. With regard to the physical signs of this condition, Liebermeister calls attention to the fact that the dryness and want of elasticity in the lung, acting in conjunction with the lessened mobility of the thoracic walls, may cause a shortening and weakening of the percussion-note. This weakening of the note may be so marked as to give rise to a suspicion that there is some infiltration of the apex.—*Deutsche med. Wochenschrift*, 1891, Nos. 1 and 2.

THE TREATMENT OF PLEURAL EFFUSIONS.

In serous effusions Lewaschew has adopted the following method of treatment:—He removes with an aspirator a considerable quantity of the pleural fluid, then injects into the pleural cavity an equal or somewhat smaller amount of sterilised Na Cl

solution of 0·7 per cent. strength ; then he again aspirates until the patient complains of some pain in the chest. This process of injection and aspiration is repeated several times. This treatment was employed even in cases in which there was considerable fever, and in which the effusion was increasing in the chest. In every case the result was a complete cure. The fever subsides gradually, and the remainder of the diluted effusion is absorbed after some time, and never reaccumulated. In this way serous pleural effusions are cured by one single operation.—*Deutsche med. Wochenschrift*, 1890, No. 52.

THE TREATMENT OF INFANTILE CHOLERA.

Rheiner considers this disease to be due to some infective agents, and does not believe it to be simply caused by some digestive disturbance. He holds that the severe and rapid collapse, and the enormous loss of fluid by the tissues—phenomena much greater than could be accounted for by the loss of fluid from the bowel—are due to a poisoning by ptomaines and noxious substances belonging to the aromatic class of bodies ; these substances are largely formed in the intestines, and absorbed thence. Up to the present the treatment of this disease has been unsuccessful, stimulants and astringents being quite unable to check the diarrhoea. There are two measures which Rheiner believes useful. In the first place, the process of washing out the stomach, which already has been practised in several hospitals ; and secondly, the injection of large quantities of water into the bowel. This treatment, although warmly recommended by Baginsky, has been too much overlooked. It causes very abundant evacuations of septic and poisonous faecal matter, and also the water is absorbed from the bowel, and replaces the great loss of fluid which has taken place, by this means the collapse, and weakness of the heart are relieved. Rheiner carries out the treatment in the following way :—A well-oiled, full-sized catheter is connected with an irrigator, the irrigator is filled with warm water, or solution of benzoate of sodium (5 per cent.), or of creasote (30 drops to the pint of water), the catheter is gently introduced into the bowel to a distance at first of at least 2 inches ; as the irrigation goes on it can often be introduced to a distance of 6 inches. The irrigator is at first raised but little, then gradually it is raised higher ; the total amount of fluid used should be from 7 to 9 oz. While the fluid is going in, there are generally several large evacuations of faeces ; after these the irrigation is continued

till the fluid comes away clear. Then some more fluid is introduced into the bowel, the catheter is removed, and the fluid is prevented flowing away by pressure with the fingers on the anus until the pressure of the fluid has passed away. These irrigations are carried out once or twice a day for several days. Rheiner believes that this treatment has saved the lives of several children.—*Therap. Monatsheft*, Jan. 1891.

ON NEW METHODS OF CHECKING HÆMORRHAGE.

Starting from the fact that lime salts exert a considerable influence on the coagulation of the blood, Dr. A. E. Wright in a thoughtful and practical paper proposes to employ these salts in various methods as styptics. For checking external hæmorrhage he uses a fibrin-ferment solution to which 1 per cent. of Ca Cl_2 has been added. This solution is prepared in the following way:—The blood of herbivora, preferably cattle, is received from the vessels into three times its volume of water, and after a few minutes it is stirred with sticks or wires, and the fibrin collected on them. This fibrin is washed in cold water for 10 minutes, and then it is treated with water for 24 hours, by which process a solution of fibrin-ferment is obtained. To this 1 per cent. of Ca Cl_2 is added. There are several important details given, for which we must refer to the original paper. Dr. Wright finds that when a few drops of this styptic are added to a test-tube of freshly-drawn blood, it causes it to clot much more rapidly and firmly than it otherwise would. In a rabbit he found it possible by a free use of the styptic to cut across both common jugulars, both axillary veins, one lobe of the liver, and a number of mesenteric arteries without causing the animal's death by hæmorrhage. Other experiments are mentioned.

The second part of Dr. Wright's paper deals with the possibility of increasing the coagulability of the blood within the vessels by means of the administration of calcium chloride. He finds that if a solution of this salt be injected into the veins of an animal, and when it has mixed with the blood, some of the latter be withdrawn, it will clot more rapidly and firmly than if the Ca Cl_2 had not been administered; and if a wound is inflicted on animals who have been thus treated, the blood clots as it escapes from the vessels, and forms a tough adherent sheeting of blood which covers the tissues, and quite stops the hæmorrhage. He therefore suggests that calcium chloride should be given whenever it is desirable

to increase the coagulability of the blood—*i.e.*, in any internal hæmorrhage, placenta prævia, hæmophilia, post-partum hæmorrhage, &c. If the dosage he employed with dogs without any bad effect were transferred to man, the dose in acute hæmorrhage would be about $\frac{1}{2}$ oz. of Ca Cl_2 dissolved in a pint of water: he adds smaller doses would probably suffice.

The Ca Cl_2 is rapidly excreted by the kidneys, so that the drug would have to be given repeatedly.

[Dr. Wright's paper is well worth reading. If his method comes up to his expectations it will be a most important advance in the treatment of internal hæmorrhage. At any rate it well deserves a careful trial.]—*Brit. Med. Jour.*, Dec. 19, 1891.

A NEW FORM OF EPIDEMIC SKIN DISEASE.

Dr. Savill read before the Medical Society of London, on November 30, 1891, a paper on this subject. A large number of photographs and coloured drawings of the various phases of the disease were shown, together with charts and tables of the symptoms. Several patients also were exhibited, with the eruption in various stages still upon them. After narrating the history of a typical case, the author went on to describe the epidemic as it had occurred in two adjacent buildings—the old sick-wards of the Paddington Workhouse and the new Infirmary. Out of 846 patients who were either in these buildings on July 1st, or came in subsequently between that date and October 31st, 163 had been attacked by the disease—89 males and 74 females—being nearly 20 per cent. Only two cases had occurred amongst the staff—the author himself and a housemaid. All the cases bore a marked resemblance to each other, but exhibited considerable variations in detail.

The disease may be described as a universal dermatitis, sometimes attended by the formation of vesicles, and always resulting in the desquamation or exfoliation of the epidermis, attended by a certain amount of constitutional disturbance, and running a more or less definite course of seven or eight weeks. The skin lesion commenced sometimes as a papular or papulo-erythematous rash, sometimes as raised maculæ, and in some rare cases as rings; but however it begins the various elements become confluent in from three to eight days, and produce a crimson, irregularly indurated surface, which is continually shedding its cuticle in flakes or scales of various size, from impalpable powder to the entire cast of a

hand or foot. If exudation were present, this entangled the flakes of epidermis and formed crusts. A large proportion of the cases were attended by a serous exudation from the formation of vesicles, which were easily broken. By this feature Dr. Savill divides his cases into two groups—the “moist” type to the number of 100, and the “dry” type, of which there were 45; 18 being of a mixed type. Several independent areas would be involved at different dates, but they all ran the same course. This condition of things lasted some weeks, several layers of cuticle being shed. By degrees the inflammation subsided, leaving the skin considerably thickened, indurated, and wrinkled. In many cases the new skin presented a raw, parchment-like appearance, smooth and shiny, and sometimes cracked.

The eruption most frequently started in the upper-arm or forearm (37 cases), but almost as frequently on the face or scalp (35 cases), 24 cases on the feet and legs, 22 cases on the hands, 13 cases on the back, 12 on the neck, and a like number on the chest or abdomen.

The eruption in most cases spread by contiguity to the neighbouring parts, and in quite half of the cases the whole surface of the trunk and limbs was involved. The disease began and ended very gradually; in some cases it was preceded by lassitude and loss of appetite, and not unfrequently the eruption would make a false start. Convalescence was tardy, and 38 of the patients had one or more relapses. Considerable irritation of the skin, and a feeling of burning and itching, were always present throughout the disease.

Of the constitutional symptoms anorexia and prostration were the chief. The feeling of lassitude and weakness were present in all cases; they were often profound, and in some the asthenia was fatal. The temperature remained normal, or even sub-normal, excepting when a large extent of skin was involved, and the inflammation was at its height. The tongue was at first coated, but soon shed its epithelium. In something like a quarter of the cases vomiting, or diarrhœa, or both, were present. The conjunctivæ were inflamed in all the severe cases, and those where the face was involved. The other epidermal structures—hair and nails—shared in the disease in its later stages, and were shed.

In 50 per cent. of the cases in which the urine was examined albumen was found, though permanent damage to the kidneys was not noted in any as the result of the disease.

The mode of termination in fatal cases was sometimes by collapse, consequent on the vomiting and diarrhœa, or more generally by the extreme weakness produced by the eruption. Some died comatose as in uræmia. Dr. Savill connects two symptoms with a fatal issue—muscular twitching, and embarrassed respiration without physical signs in the lungs.

Several of the cases were complicated with boils or carbuncles scattered about the body; and in some the skin remained pigmented for long after the eruption had subsided.

The affection has to be diagnosed in the first place from erysipelas, especially when it attacks parts containing loose cellular tissue. This is effected by its gradual advent, the absence of pyrexia—in some cases by the presence of vesicles, sometimes by the absence of a raised margin, and sometimes by the wide extent of the rash. Those cases which commenced as maculæ bear some resemblance to German measles; but the absence of pyrexia, and the extreme desquamation are sufficient to distinguish them. The “dry” variety of cases bore a striking resemblance to pityriasis rubra, but they differed in the fact of their being epidemic, and in children being almost exempt. Moreover, since we must conclude that Dr. Savill’s cases were all one disease, and the “moist” type, which were in the majority, so widely differed from pityriasis rubra, we must also conclude that the other cases did not belong to this disease. On the whole the disease bears more resemblance to acute general eczema than any other known disease; but it differs considerably from this disease in the extent and severity of the dermal inflammation and thickening, the profuseness of the exfoliation, and in the definiteness of its course.

The only treatment which availed was the external application of germicides, and the administration of stimulants.

The author then proceeds to consider the question of ætiology. Age was certainly a very important predisposing condition, for although the Infirmary contained a relatively large number of aged persons, still it was shown that if the inmates were classed according to age into decades, the percentage of those attacked in the earlier decades was considerably smaller than the percentage in the later decades.

Thus, of those between 10 and 20, 6 per cent.

„	„	20	„	30,	7	„
„	„	30	„	40,	6	„
„	„	40	„	50,	17	„

Of those between 50 and 60, 24 per cent.

„	„	60	„	70, 38	„
„	„	70	„	80, 35	„
„	„	80	„	90, 24	„

Males seemed more prone to take the disease than females in the proportion of 24 to 16 per cent. After discussing and excluding food, soap, scabies, and water as possible exciting causes, the question of epidemic influences, such as climate and season, and contagion were referred to.

The clinical phenomena of the disease are alone almost sufficient to stamp it as contagious; its more or less definite source, the constitutional disturbance, the marked effect of germicides, the wave-like manner in which the outbreak had come and gone, and the fact that 6 out of the 11, who were the only ones out of 202 healthy persons to contract the disease, were “helpers” tending on sufferers from the disease. Nevertheless, the contagion is evidently of a feeble order, and seems to require several important predisposing conditions, especially including old age and sickness, or “hospitalism,” for its development. The bacteriology and several other points connected with this strange outbreak required careful investigation, and would form the basis of a future communication.—*Lancet*, Jan. 2, 1892.

ANDROLOGY.

THE Congress of American Physicians and Surgeons has established a Section of Andrology, thus specialising the genito-urinary diseases of the male sex. The *Journal of the American Medical Association* hails the move as a “first step in the right direction.” The American Andrological Association is now an integral part of the Congress, and andrology takes rank with gynæcology, ophthalmology, dermatology, and all other recognised ologies. Our contemporary takes a gloomy view of past treatment of affections peculiar to the male. They “have been more neglected, less fully understood, and more frequently treated, ‘for what there is in it,’ rather than a desire to benefit the patient, than was ever true of the diseases of women. We believe that to-day fully as barbarous, slipshod, and dishonest work is being done in this class of affections as was ever to be observed in gynec disease.” And again: “Andrology will never occupy the position it deserves until the average doctor ceases to think himself competent to treat the most complicated case of genito-urinary disease—as long as the patient’s money lasts.” In future men’s genito-urinary apparatus will be better looked after—at least in the United States.

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

President—GEORGE H. KIDD, M.D., F.R.C.S.I.

General Secretary—W. THOMSON, F.R.C.S.I.

SECTION OF PATHOLOGY.

President—C. J. NIXON, M.D.

Sectional Secretary—J. B. STORY, F.R.C.S.I.

Friday, January 22, 1892.

DR. J. W. MOORE in the Chair.

Exhibits.

DR. JAMES LITTLE showed the intestines from a girl, aged eight years, who had died on the twelfth day of typhoid fever, her illness having been characterised by continuously high temperature, delirium, and great distension of the abdomen. The Peyer's patches showed very characteristically the stage of swelling and elevation, and the solitary glands were also swollen and the mesenteric glands greatly enlarged. He exhibited also the intestines taken from a girl, aged eighteen, who had died on the fifty-second day of enteric fever. Her symptoms had been retraction of the abdomen up to the thirty-fifth day, with obstinate constipation. After the thirty-fifth day the abdomen became distended and tender, and the *post mortem* showed that the changes were chiefly in the large intestine, the solitary glands of which were extensively ulcerated. The solitary glands of the lower end of the ileum were also the seats of ulceration, and in one a perforation had occurred; and although the aperture had been stopped with fæces, and extravasation had not taken place, peritonitis, with a considerable purulent effusion in the right ileo-cæcal region, was present.

DR. O'CARROLL presented specimens from a case of enteric fever, in which perforation of the intestine occurred on the thirty-sixth day, the

patient not dying till the fifty-ninth day. The intestines in the hypogastric and pelvic regions were found matted together by peritonitis, while a perforation was found in the ileum leading into an abscess cavity full of grumous purulent material. All the intestinal ulcers, except that in which the perforation occurred, were healed. No ulceration of Peyer's patches could be recognised.

Modern Methods of Isolating Typhoid Bacilli out of Bacterial Mixtures.

DR. M'WEENEY read a paper dealing with modern methods of isolating typhoid bacilli out of bacterial mixtures, and showed some plate and potato cultures illustrative of Uffelmann's procedure. He said that one of the chief difficulties met with in the investigation of water and food-stuffs suspected to contain typhoid bacilli was that there were usually present a very much larger number of putrefactive germs of all kinds, which, being more intensely saprophytic than the typhoid organism, grew on our laboratory substrata much more luxuriantly, and, producing rapid liquefaction of the gelatine, spoilt the plates before the sought-for germs had had time to develop into visible colonies. This difficulty was especially hard to overcome when diagnostic cultivation from fæces had to be done. Considering how great was the interest attaching at the present time to the subject, owing to the aspersions cast on the Dublin drinking water, he thought it well to lay before the Academy a short *résumé* of the various methods that had been proposed with a view to obtaining typhoid cultures under such circumstances.

It had been proposed to suck up with sterilised pipettes or filter paper the fluid from the liquefying colonies, and substitute sublimate solution. This was a bad method, for the manipulations involved great exposure of the plates and consequent risk of contamination.

A much better procedure was to make the sowings on gelatine or agar, to which had been added some substance antagonistic to the growth of most other organisms, but favourable to, or at any rate not inhibitory of, the growth of the typhoid germs.

Chantemesse and Widal (*Annales de Phys. Norm. et Pathol.*, 1887, No. 2) found that .2 per cent. of phenol, when added to the gelatine, prevented the other organisms from developing, but permitted of the growth of the bacillus of Eberth. Thoinot's modification of this procedure, and Holz's observations and objections (*Ztschr. f. Hyg.*, viii., 143) were next dealt with. Dr. M'Weeney then described Noeggerath's method by coloured nutrient substrata, and Gasser's modification (*La Sém. Médicale*, 1890, No. 81), and finally Uffelmann's method (*Ber. klin. Woch.*, Aug., 1891) of acidifying the substratum with citric acid and colouring it with methyl violet, were gone into. Dr. M'Weeney had employed Uffelmann's method and found it distinctly useful, though in one of his cases a bacillus was present (in fæces), which grew most abundantly in the medium, but

proved, in inoculation on potatoes, not to be the true typhoid organism. He always used parallel cultures of the genuine typhoid bacilli in every diagnostic research. Based on somewhat different principles, but occasionally useful, were Kitasato's negative indol reaction, and Petruschky's litmus method. Lastly, allusion was made to the various attempts to ascertain the precise degree of reliability to be attached to the potato culture as a means of diagnosing typhoid from other bacilli.

DR. M. A. BOYD expressed himself very interested in Dr. M'Weeney's communication, and it seemed to him that some practical deductions could be drawn from it. First, that the typhoid bacillus is an exceedingly hardy one, and does not yield so readily to antiseptics as do the saprophytic and pyogenic bacteria that are such constant accompaniments of it in the alimentary canal. Secondly, that it seems to grow in a mildly acid medium, though in the intestinal canal its culture field and surroundings are strongly alkaline. To destroy it in the alimentary canal by an antiseptic would then seem to be not a very easy matter, and it would seem to require a strong one to effect this object.

Aortic Stenosis.

DR. LITTLE showed the heart and aorta of a patient, aged thirty-six, who had died of cardiac dropsy, and who had, during life, a very localised diastolic murmur limited to the right second costal cartilage, and exophthalmos. After death the left ventricle was found hypertrophied and the aortic valves incompetent, and there were signs of ulcerative endocarditis on one cusp of the aortic valve and on the adjoining mitral cusp; but in addition to these changes which were anticipated, there was found a narrowing of the aorta, and in and beyond the origin of the left cardiac artery the narrowing was so close that only a No. 8 catheter could be passed, and beyond the narrowed spot, which Dr. Little considered congenital, there existed on the lining membrane of the vessel a superficial ulceration similar to that which existed in the aortic and mitral valves.

DR. H. T. BEWLEY remarked that these cases of narrowing of the arch of the aorta, though rare, were not unknown. They almost invariably existed at one spot, viz.—just beyond the origin of the left subclavian artery, and near the spot where the ductus arteriosus joined the aorta. The reason of this fact was, that during foetal life the blood going to the head and neck does not flow in the aorta further than the left subclavian; the blood for the body and lower extremities flows through the ductus arteriosus, and between the subclavian and ductus hardly any blood flows. It was at this spot that the narrowing occurred. The cause of the narrowing was not well known, possibly it was due to some localised inflammation. He could not understand how any such narrowing could occur after birth when the aorta is full of blood under such high pressure.

DR. SCOTT suggested that the ulcerated patch at the distal side of the stricture was probably not due to the mechanical action of the blood, but to an extension of the malignant endocarditis which was seen on the valve, the infective process commencing on a site previously unhealthy from endarteritis, evidences of which were apparent in other parts of the vessel.

Multiple Abscesses of the Brain.

DR. PARSONS read a paper on the above subject. [It will be found at page 194.]

Mediastinal Lympho-Sarcoma.

DR. J. W. MOORE read a paper on the above subject. [It will be found at page 199.]

SECTION OF SURGERY.

President—H. G. CROLY, President of the Royal College of Surgeons in Ireland.

Sectional Secretary—R. L. SWAN, F.R.C.S.I.

Friday, January 29, 1892.

The PRESIDENT in the Chair.

Aneurysm of the External Iliac Artery.

MR. SWAN asked for some details of a case of aneurysm of the external iliac artery, which had been treated medically by Mr. Thornley Stoker, and was exhibited, and the subject of which was exhibited by Mr. Stoker, without any trace of the disease.

MR. STOKER, in reply, stated that the man presented the usual well-marked symptoms of an iliac aneurysm. The gravity of the operation of deligation of the common iliac made him hesitate to perform it. The treatment was a combination of Valsalva's and Tufnell's methods, with the most favourable result.

Ballooning of the Rectum.

MR. HAMILTON read his paper on ballooning of the rectum—a term used by Mr. Bryant to denote the condition. Mr. Hamilton drew attention to the following extract from a course of lectures delivered by him in Steevens' Hospital in 1883, and published in the *Dublin Journal of Medical Science* for that year:—"I have occasionally met with a peculiar condition of the rectum in the living subject, in which all rugosity of the mucous lining appeared completely obliterated. The finger, when passed

through the anus, seemed to enter a large globular cavity perfectly vacant, with walls absolutely smooth. The first impression would be as if the bowel was greatly distended with gas, but none passes along the finger or escapes after its removal. I have not been able to connect this state of the bowel with any special morbid condition. I lately observed an example of it in No. 6 ward in a case of severe melæna, in which a digital examination became necessary for the purpose of diagnosis." He asked the assistance of the members of the Academy in determining the diagnostic significance of this remarkable phenomenon, and concluded by stating:—"My own experience and observation would formulate the following propositions: Ballooning occurs in many cases without stricture; stricture occurs in many cases without ballooning."

DR. BALL discussed the question of dilated rectum, and expressed the opinion that, as a temporary condition, it was common, and without diagnostic significance. When, however, it assumed a permanent character, it was probably often associated with diseases of the rectum, and it is easy to understand how such a disease as malignant stricture would (by pressure on the nerves) lead to a more or less marked paresis.

SIR WILLIAM STOKES expressed satisfaction at Prof. Hamilton having established his priority in having observed the condition of ballooning of the rectum. He thought that it would hardly be looked upon as a diagnostic sign of much value in determining the existence of stricture, as he had observed it in other morbid conditions of the rectum. Sir William Stokes mentioned some cases of malignant ulcers of the rectum on which he had operated, and in which this condition of ballooning was well marked. He thought therefore the diagnostic value of the condition in any special condition of the rectum was questionable.

MR. WHEELER said that he had a gentleman now under his care, formerly a patient of the late Mr. Tufnell; he is suffering from stricture of the rectum, and has this condition now called "ballooning." He congratulated Mr. Hamilton on the interesting communication he had brought before the Society.

MR. W. STOKER mentioned a case of spinal concussion in which the symptom was markedly present.

The PRESIDENT said that he was familiar for many years with the condition of the bowel now known as ballooning, but that condition does not lead to a diagnosis of rectal disease: in ulcer of the rectum the gases cannot escape, and that will account for the distension in those cases. The President said the name ballooning was comparatively new, but the condition was one he had long been familiar with. The fact of such a condition occurring in spinal cases shows it is not of much help in diagnosis of rectal trouble.

MR. HAMILTON, in reply, said:—I have to thank the members of the Section for the kind consideration which they have given to my paper.

Mr. Ball's idea that ballooning is the result of deficient nerve force below a stricture is held by many, but I do not think it gives a satisfactory explanation of the phenomenon. The President does not seem to attach any diagnostic value to ballooning, and yet the opinion of a sound practical surgeon like Mr. Bryant must have weight with a great many. I am surprised to hear the President say that his operations for ulcers and piles were followed by painful distension of the rectum, with flatus. My experience is quite the contrary. I find, since the perfect dilatation and stretching of the sphincter has been adopted as a preliminary to such operations, this is a trouble of the past. The ballooning which Mr. Bryant and I have described has characters more decided than a mere passing distension with flatus.

*Traumatic Epilepsy, Aphasia, and Paralysis of six years' duration,
treated by Trephining; Recovery.*

MR. HEUSTON read a paper on an interesting case of trephining in epilepsy and aphasia, the result of injury. An excellent recovery followed the operation.

CASE.—G. T., aged thirty, a discharged soldier, was thrown by a horse about six years since, and dragged along the ground for some distance; was removed in an unconscious condition to the Meath Hospital, remained in this condition for a fortnight, and was subsequently retained in the Hospital for four months. He was for a further period of five months in the Military Hospital at Portobello Barracks, when he was discharged from the Service owing to a hesitancy in his speech and continual headache. Within a fortnight of leaving the Service he commenced to have epileptiform convulsions at irregular intervals, frequently obtaining three a day, and at other times no attack would occur for a month. Could always tell when an attack was about to occur by bright flashes before the eyes, or a feeling as if his head was being shoved downwards, or blindness.

The patient presented a heavy, dull cast of countenance, with a lifeless expression of the eyes, as if his mental power was deficient. When spoken to is unable to answer except in monosyllables, or with a considerable interval between the words, which are peculiarly clipped, although he evidently understands all said to him. Tremors exist in his left hand and arm, and the left side of his face twitches frequently. There is marked loss of muscular power in his left hand and arm, although sensation is unimpaired. Dr. Swanzy examined his eyes, which were found normal in all particulars. A triangular scar of the scalp existed in the left occipital region, above which is to be felt a well-marked circular depression of the skull, about $\frac{1}{2}$ inch in diameter; this corresponded in position to the second annectent convolution of the brain.

On March 24th, 1891, the skull was trephined at seat of injury with

a $\frac{3}{8}$ -inch trephine, when the bone was found to be of great thickness and density, there being an absence of the diploe. The inner surface presented no evidence of depression, nor was any evidence to be found within an inch of the trephine hole. The dura mater was thickened and had lost its silvery appearance, and bulged into the opening, there being no evidence of brain pulsation. An aspirator needle was passed through the dura mater, and some of the subdural fluid removed, which continued to flow after removal of the needle, the brain pulsation now becoming visible and being natural.

The removed portion of bone was now broken into pieces and replaced in trephine hole, a drainage tube being also inserted in contact with the dura mater at place of opening made by aspirator needle; the scalp was sutured, and dressed by zinc-sulphite gauze. The wound healed by first intention, and the drainage tube was removed seven days after operation.

Eleven days after operation all dressings were removed, and the patient allowed to walk about the Hospital. A month after operation the patient was discharged from Hospital, there being then no recurrence of the epileptiform convulsions, his speech being greatly improved, no tremors of hand and arm, while the muscular power had considerably improved. This improvement had continued without intermission to the present time—ten months after operation.

SIR WILLIAM STOKES thought that Mr. Heuston should be congratulated on the result he had obtained in the remarkable case he had just detailed. Sir William Stokes had previously had the patient under his care in the Meath Hospital, but he could not persuade the patient to submit to the operation of trephining, or rather the patient's wife would not consent to have it performed. Sir William Stokes had shown the case to Mr. Victor Horsley, who happened to be in Dublin at the time, and he also urged on the patient the desirability of the operation, but in vain. Mr. Horsley thought that probably an unabsorbed clot of blood would be found at the situation where the injury was received, but apparently this was not found. The trouble was then probably caused by pressure from the thickened or hypertrophied condition of the bone at the seat of the injury.

MR. WHEELER stated that one of the first cases that he had trephined for epilepsy was a young man, a soldier, who had his skull fractured in the left parietal region by a kick from a mule. A splinter of bone was driven into the brain, causing epileptic seizures. He had detailed the case nearly twenty years ago at the Surgical Society, and would only add, that this patient made a good recovery, and has continued in perfect health, as far as he knew, ever since. The second case was a man of forty years, brought to him by his former pupil, Dr. Kelly, who had been suffering from occasional epileptiform convulsions for three years, and who, three months before he came under his notice, had convulsions every eight or nine days. After careful

examination it was ascertained that he had received a severe blow about four years before in the right front temporal region. After a little trouble a cicatrix was found in this situation, and after some consideration he placed the crown of an inch trephine over the bone corresponding to the cicatrix already mentioned. The inner table of the bone removed was much thickened and adherent to the dura mater. Suffice to say rapid recovery followed, and three years ago the man was well. The third case that he could recall the history of at present was a patient in the City of Dublin Hospital, sent by Dr. Lyster, of Kilkenny, for epileptic fits, very occasional. He was only able to ascertain that the patient had had slight seizures since he had received a blow fracturing his skull close to the left parietal eminence. He suffered from word-blindness, and it was for this that Mr. Wheeler trephined him over the depression; the inner surface of the bone was thickened, and the dura mater thickened and adherent. There was not any abatement of the word-blindness from this operation, and it was not until three or four days after, when observing the dura mater bulge—into which he made an incision, and pus flowed out—that the patient improved, and finally recovered. The next case that he could recall differed from the preceding cases, inasmuch as it occurred in a young male adult, who suffered from a congenital deficiency, and had the operation of trephining recommended for him many years previously by Sir James Simpson. The deficiency existed in the site of the lambdoid suture of the right side; pressure on the edge of this deficiency caused great pain, and symptoms as if the patient was about to have a fit. He had suffered from as many as twenty-five fits and more in the twenty-four hours. After operation the patient lived for three days, and had no return of the epilepsy, although he had one seizure during the operation, and two before. In all the cases that Mr. Wheeler had operated for epilepsy consequent upon injury, he had found the dura mater thickened, and within a very recent date he had the opportunity of seeing Mr. Nixon operate over the site of an injury to the skull; when the bone was removed in this case the dura mater was enormously thickened. Epilepsy caused by injury like the cases quoted was nearly always cured by operation in Mr. Wheeler's experience; but he had over and over again declined any operative procedures in what was termed general epilepsy, the exact site of the "nodus epilepticus" not being defined. There were forms of epilepsy where one might gauge the centre where the lesion was. Dr. Heuston had mentioned that the seventh nerves were engaged; it would be interesting to him (Mr. Wheeler) to know whether the aphasia improved as the muscular power was gained, for his observations led him to conclude that there was an almost definite ratio between the two. There was not any doubt that the patient whose history had been detailed, suffered from aphasia.

MR. SWANZY said :—I regret that Mr. Heuston has not offered some explanation of the symptom of difficulty of speech from which the patient suffered. In the title of his paper he has termed it aphasia, but in the course of his paper he has, I venture to think, wisely avoided that term. Having had the opportunity of carefully studying the case several times, I formed the opinion that the difficulty of speech was one of articulation, dysæsthesia, rather than aphasia. The man could speak, and had no hesitation in finding the right words, and he understood all that was said to him. He could not write well, for he had never learned to do so. When I first saw him, long before the operation, I thought it probable there was a lesion, hæmorrhage, or rupture of fibres in the pons or medulla, giving rise to the dysæsthesia, twitching of the fingers of the left hand, and some blepharospasm which he had at the time. The result of the operation shows that there could have been no material lesion there ; but I still think these symptoms were distant symptoms due to derangement of functions in those parts, rather than in the cortex at the seat of lesion.

MR. NIXON said he thought no hard and fast rule could be laid down as to replacing the bone, as this must altogether depend on the condition of the part removed. In a case in which he had recently trephined the bone was in some places $\frac{1}{2}$ inch in thickness—it was irregularly thickened, which greatly increased the difficulty of the operation, as owing to the density of the skull over forty minutes were occupied in removing the first disc of bone. It was hard, dense, without diploe, and if replaced he believed it would have acted as a foreign body. He thought Mr. Heuston was to be congratulated on the brilliant result he had achieved in the case he brought forward to-night.

The PRESIDENT referred to trephining in such cases, and believes the operation is one too often put off in the absence of serious symptoms—serious symptoms often develop suddenly. The President referred to a case alluded to in his address on “Head Injuries,” at the opening meeting of the Surgical Section of the Royal Academy of Medicine last Session. The patient, a gentleman, had symptoms which, in his opinion, pointed to the necessity for trephining ; but his (the President’s) hands were tied at consultations, and the operation was not permitted. The patient’s condition became much worse, and at a later period a portion of bone exfoliated, and the patient recovered.

MR. HEUSTON said the manner in which the bone was replaced was as follows :—The bone being broken into small fragments by a bone-forceps, those fragments were placed into the trephine hole, resting on the dura mater, with the intention that they should unite and further the process of union of the skull. This was done, not alone owing to the fact that it was so highly recommended by different authorities, but also that he had, in former cases of trephining, ample opportunity of observing how fully they fulfilled the intended object. In one case, where repeated

operations had been performed, in the first operation no bone had been introduced, and a permanent opening in the skull remained, whilst in the later operations bone had been placed in the trephine holes, and after a short period no external evidence of the operation remained. I was glad to hear that Sir William Stokes had such an eminent authority as Mr. Victor Horsley concur with him in the advisableness of operation, and I regret extremely that, owing to the man disappointing me in not coming to the meeting, I was unable to show the result of the operation to him. In reply to Mr. Wheeler's observations respecting the implication of the seventh nerve, I would refer him to the spasmodic contractions of the left side of the patient's face as indicating irritation of that nerve. The patient's hearing was not, however, implicated. My opinion as to the nature of the case agrees very much with that expressed by Mr. Swanzy, except in that there were, in my opinion, distinct evidences of aphasia as noted in the case. Otherwise I am of the opinion that the chief symptoms were due to an osteoplastic osteitis, with a pachymeningitis externa, giving rise to a pressure on the brain in a twofold manner—first from the thickening of the bone and dura mater, and secondly from an increase of the subdural fluid; otherwise I could not understand the improvement in the case after operation, or the absence of pulsation of the brain when the bone was removed.

The Section then adjourned.

SECTION OF MEDICINE.

President—J. MAGEE FINNY, M.D.; President of the Royal College of Physicians of Ireland.

Sectional Secretary—A. N. MONTGOMERY, M.R.C.P.I.

Friday, February 5, 1892.

The President in the Chair.

Living Specimen.

DR. H. C. TWEEDY exhibited a case of Xeroderma (Ichthyosis Simplex).

The Dietetic Treatment of Enteric Fever.

DR. WALLACE BEATTY read a paper on the dietetic treatment of enteric fever. He laid great stress upon the importance of care not only as to the nature but also as to the quantity of food. He considered from two to three pints of milk in the twenty-four hours ample nourishment for enteric fever adult patients during the entire illness. He believed that

patients who were fed on such a restricted diet suffered much less from diarrhoea, tympanites, and sleeplessness than patients more liberally fed. He called attention to the fact that when from some cause, such as threatened hæmorrhage, the diet of patients had to be much restricted, a general improvement in all the symptoms followed. He advised extreme care in the manner of changing the diet at the approach of convalescence—a sudden change from liquid to solid food was, he believed, likely to provoke a fresh outburst of fever and bring on a relapse.

A Case of Recurrent Enteric Fever followed by True Relapse.

DR. J. W. MOORE submitted a “clinical record” of a case in which, not only did enteric fever recur in the same patient, but the recurrent attack was succeeded by a true relapse after an apyrexial period of eleven or twelve days.

In April, 1877, the author attended, with the late Dr. Alfred Hudson and Sir George Owens, a lad of fifteen years, who passed through a typical attack of enteric fever lasting 23 days, in which, however, constipation, and not diarrhoea, was the rule. In October, 1891, the same gentleman, at the age of twenty-nine, sickened of a fever which proved to be undoubted enteric fever. After running an acute course of 24 days, followed by a sub-febrile period extending over another week; this attack was succeeded by convalescence, which seemed to be in all respects normal. On the eleventh or twelfth day, however, from the establishment of apyrexia, acute febrile symptoms again showed themselves, and for the third time in his life the patient passed through an attack of enteric fever.

Discussion.

The adjourned discussion on Dr. M. A. Boyd's paper on “Some Recent Modifications in our Views of Enteric Fever and its Treatment,” which was read at the last meeting of the Section, was then opened in connection with a discussion on the papers which had just been read.

The PRESIDENT criticised one or two points in the clinical history of the case described by Dr. Moore, which occurred to him to need explanation. First, with reference to the significance of the diazo-benzole reaction. In his own experience—and he had applied the test almost daily to a large number of cases in Sir Patrick Dun's Hospital—he did not rely upon it as by any means a safe clinical test, either as to diagnosis or prognosis in fever, and he did not agree with Dr. Moore that the failure of the test was due in any way to the fact that his patient had had fever fifteen years before. Secondly, he asked further information as to the clinical means of recognising the very remarkable fact he recorded of the heart, in early and marked weakness—viz., having

“sagged from side to side” with change of posture, when in his experience and according to the teaching of the late Dr. Stokes, the impulse of the heart in cases of typhous softening cannot be felt at all in these cases, or at best with the greatest difficulty.

DR. H. T. BEWLEY did not think the question as to relapses in typhoid could be solved until the whole question of immunity, natural and acquired, was more certainly known than it is at present—we do not know accurately why cases of infective fevers got well at all; possibly the greater tendency to relapse in typhoid fever as compared with such other fevers as typhus, scarlatina, and measles, was connected in some way with the long and irregular course, and prolonged termination of the fever. With regard to giving solid food, there are some cases of typhoid in which the fever will not come down, and the patient grows weaker until some solid food is given. It is a very difficult question to say exactly when the time has come to give this solid food, and he would look anxiously for further information on this subject. With regard to diet, he did not think one could be at all dogmatic, seeing that the practice of skilful and experienced physicians differed so much as to the amount of food they allowed.

DR. WALTER SMITH said that Dr. W. Beatty’s paper was essentially a qualification or limitation of Graves’ celebrated maxim. But if it is possible to under-feed fevers, it is also certainly possible to over-feed them, and so to hurt the patient. Obstinate vomiting, for example, may be caused by too zealous administration of milk. The condition of the tongue is a more satisfactory guide as to convalescence than the temperature or pulse, and two weeks, as a rule, should be allowed of normal evening temperature before any liberties are granted to the patient. The diazo-benzole test applied to the urine of enteric fever is unreliable and unsatisfactory. It is merely a curious colour-test for a chromogen in the urine.

DR. LITTLE considered there could be no doubt of the value of a restricted diet in enteric fever, there could be no doubt of the value of milk when diarrhoea is present; but some patients are unable to digest milk, and especially if then danger arises from cardiac failure, he considered properly made animal broths more suitable than quantities of milk. Though a matter which had only cropped up incidentally, as Dr. Moore had mentioned the use of quinine in his case of enteric fever, Dr. Little was tempted to ask why it was that quinine was so generally given in enteric fever? As far as he had seen no good effect was produced by quinine in enteric fever, and sometimes headache, sleeplessness, and intestinal disturbance resulted from its use.

MR. DOYLE also joined in the discussion.

DR. BOYD, in his reply to the criticisms on his paper on the antiseptic method of treating enteric fever, considered that so far no more rational method of dealing with the disease from its pathology presented itself, and

notwithstanding Dr. Smith's doubts as to any disinfectant reaching the intestine in sufficient strength to be of use after passing through both stomach and duodenum, he thought if any form of antiseptic could survive unaltered, the gaseous one should—especially in a solution which slowly parts with it. Chlorine evolved from an alkaline solution—such as the liq. sodæ chlorinatæ of B. Ph.—in his hands was followed by better results than when formed in an acid mixture. As regards the relapses in enteric fever, they seemed to him to be due in most instances to a fresh set of glands and Peyer's patches becoming the seat of fresh infection by typhoid bacilli. He lately showed an instance in a pathological specimen exhibited at the last meeting of a portion of the ileum, the seat of active ulceration in a patient who was ten days apyretic, when he died from acute perforation, the result of over-eating. This specimen showed how long a condition of ulceration may exist after typhoid, even when the temperature has fallen permanently for as long as a week.

DR. WALLACE BEATTY, in reply, said that he quite agreed with Dr. Bewley and Dr. James Little, that exceptional cases of enteric fever occur in which the evening temperature remains above the normal long after all the other symptoms of enteric fever are over, and where no discoverable complication is present. In these exceptional cases he agreed with Dr. Bewley and Dr. Little that solid food cannot be withheld.

DR. J. W. MOORE, in reply, agreed with the President and Dr. Walter Smith that the diazo reaction was open to doubt as a diagnostic of enteric fever; nevertheless, it was an interesting, and often a confirmatory, test of the presence of this fever. He did not depend solely upon palpation as a method of physical examination of the heart, as the President seemed to think, but both auscultation and percussion indicated undue mobility of the heart in his patient's case.

In answer to Dr. Little, Dr. Moore said that he sometimes gave small doses of quinine in enteric fever—not to reduce temperature, for fulfilling which object large doses alone would avail—but as a tonic, from his experience of the remedy in other acute and prostrating maladies.

Once the specific origin of enteric fever was admitted, Dr. Moore believed that no mere error in diet would bring about a true relapse, although it may be a contributory cause of such an accident.

The Section then adjourned.

SECTION OF OBSTETRICS.

President—ANDREW J. HORNE, F.R.C.P.I.

Sectional Secretary—F. W. KIDD, M.D.

Friday, February 12, 1892.

The PRESIDENT in the Chair.

Exhibits.

DR. W. SMYLY exhibited—(a) Six cases of Pyosalpinx; (b) Three Uteri extirpated for Cancer.

DR. MACAN exhibited—(a) Fibrocystic Tumour of Uterus; (b) Double Dermoid Cysts of Ovary; (c) Dermoid Cyst of Ovary with Cancerous Degeneration of Cyst Wall.

Notes of a Case of Ruptured Uterus, with Recovery.

DR. BARRY—The patient, aged thirty-five, primipara: was 38 hours in labour when I saw her; liquor amnii had drained away early in labour. On making a digital examination, os uteri about the size of a florin, thick and rigid. On passing my finger through the os uteri I detected a tear passing in an oblique direction for about four inches. No prolapse of intestine. Promontory of the sacrum easily felt, with vertex presenting at the brim of the pelvis. Conjugate diameter measured three inches. Having passed a catheter and drawn off about a pint of bloody urine, I got an assistant to steady the uterus. Keeping pressure in the axis of the brim of the pelvis, I incised that portion between the os uteri and tear. Applying forceps, I failed to deliver. Perforated head, when an easy delivery was effected, but considerable difficulty experienced in extracting the shoulders. The placenta, which was morbidly adherent, was attached to the fundus and slightly posteriorly. Patient made a good recovery. I saw the patient three months after delivery, when, on examination, the uterus was found normal in size and position, patient menstruating normally without pain. Os externum quite small, admitting with difficulty the point of a sound, very little evidence of rupture remaining.

Rupture of the uterus is one of the most appalling complications met with in midwifery practice, one also difficult to foresee or control. Up to the beginning of the present century cases of ruptured uteri were practically abandoned as being beyond human aid. The profession is indebted to Dr. Douglas, being one of the first in Great Britain to resort to artificial delivery, having reported a successful case in 1784. Active interference practically dates from that time. Many difficulties are met

with in the diagnosis of this grave complication, and a number escape detection till after delivery. The majority are, however, easily recognised. The patient herself is conscious that something has gone wrong; she suffers from acute localised abdominal pain; her appearance becomes anxious; cessation of labour pains; recession of the presenting part; hæmorrhage shock; quick, weak pulse; and dyspnœa. The immediate result of the case will depend on the hæmorrhage; it is sometimes so great that the patient dies before assistance can be rendered her. In a number of cases where the hæmorrhage is not excessive, or the shock profound, prognosis, although grave, is much more favourable.

In conclusion, I would urge the following points as to treatment:—

- I. (a) If the foetus is still in utero;
- (b) If the hæmorrhage cannot be controlled;
- (c) Or if you have prolapse of intestine—abdominal section is indicated.

II. Deliver your patient as speedily as possible, and by that method that affords her the least risk.

(a) If the foetus is still *in utero*, os dilated, vertex presenting, deliver by forceps; or if the foetus is dead, craniotomy.

(b) Breech presentation, still *in utero*, deliver manually.

(c) Shoulder presentation, if still *in utero*, deliver by embryotomy or abdominal section.

III. It is dangerous to wait for reaction—

As shock and collapse are most frequently due to hæmorrhage, which, if not controlled, will quickly dispose of the patient.

IV. Give stimulants by mouth and per rectum; ether hypodermically.

DR. ATTHILL said the case as described by Dr. Barry was a remarkable one, and as far as he (Dr. Atthill) was aware, no similar one had been recorded. Here was a woman 38 hours in labour, and in whom the waters had long before drained away, with so small a conjugate diameter that the head never came in contact with the os, yet a rent occurred in a position so situated that the finger passed into the os could detect it; it evidently was a rupture of the cervix. How it could have occurred under the conditions detailed Dr. Atthill was unable to explain.

Fæcal Fistula following the Removal of Abdominal Tumours.

MR. M'ARDLE read a paper on fæcal fistula following the removal of abdominal tumours. After detailing cases of this trouble he explained that the following seemed the methods of production:—

- 1st. Extension of suppuration from the tumour into the intestine.
- 2nd. Ulceration from the intestine extending into the tumour.
- 3rd. Local necrosis of the bowel wall due to pressure of the tumour.
- 4th. Tearing of the coats of the bowel during the operation.

5th. Disturbance of the nutrition of the bowel owing to injury of the vessels of the intestine.

6th. Constant pressure of the glass drainage tube in contact with the bowel.

In reference to the treatment, Mr. M'Ardle said—The situation of the opening in the bowel will, more than any other circumstance, determine the extent of surgical interference. While referring to this matter, there is one method of determining the site of perforation which does not seem to be as generally recognised as it deserves. I refer to inflation with hydrogen gas. As a diagnostic aid, gaseous distension is infinitely superior to the injection of fluids, since it does not interfere with the steps of any operation which may be deemed necessary after its use, while fluids are a source of constant annoyance during suture of the bowel.

Often the character of the discharge suffices to show the position of the opening; at other times the relation the intestines bear to the tumour indicates the locality of the fistula.

When the opening is in the rectum, closure is almost certain owing to (a) fixity of this portion of the gut, (b) great vascular supply, and (c) the chance of extra-peritoneal healing, hence early operative interference is contra-indicated.

My colleague and former pupil, Dr. Alfred Smith, gave me an opportunity of watching the course of a case, which also came under the notice of your President, in which a fistula from the middle third of the rectum passed through the lower angle of the abdominal incision and discharged freely. In a few weeks this patient left for the country, and is now perfectly well. The cases in which surgical interference becomes necessary are those in which the perforation is high up and emaciation is marked, or where the bowel has not formed a firm junction with the abdominal wall, and there is danger of infection of the peritoneum. In such a case as this, after the removal of a mass of tubercular glands from the right iliac fossa, I found that the discharge, which was yellowish-grey and sour smelling, was from a coil of small intestine in which there was an opening capable of admitting my index finger. In this case, after freeing the bowel, I removed the edge of the opening with scissors curved on the flat, leaving an oval opening, its greatest length being $1\frac{1}{4}$ inch along the convexity of the gut. This I closed with fine silk, using an ordinary sewing needle, and applied sutures after Lembert's method. I pushed the intestines up into the abdomen, keeping them away from the wound with a sponge on a long forceps. I closed the peritoneal opening from which I had torn the perforated bowel. The course of the fistula was peculiar. It ran behind the cæcum, and its outer opening was at the middle of the crest of the ilium. The sinus left after closure of the peritoneal cavity I scraped with Volkmann's scoop and plugged with

iodoform gauze, having first laid in a firm rubber drainage tube. The patient made an uninterrupted recovery, and is now, five years after the operation, in perfect health.

If there be one thing more certain than another in reference to the treatment of fistulæ, it is the point emphasised by the case noted by Mr. Croft, in which injudicious examination of the fistula by passing the finger into the bowel caused a slight breaking down of the adhesions around the opening, and a fatal peritonitis.

The conclusions I have come to in reference to the treatment of fistulæ are—

1st. Early interference is unjustifiable where the fistula is from a fixed portion of the intestine.

2nd. When operation is demanded it should be thorough, and aim at the closure of the intestine, as in the case to which I have called attention.

DR. ATTHILL had met with three cases of fæcal fistula in his practice. In one of them the case had been diagnosticated as one of suppurating ovarian tumour. The operation was performed under very unfavourable circumstances, the temperature before it being 103°. The tumour proved to be a suppurating one, and in addition there also was a deep-seated pelvic abscess, which during the removal of the tumour ruptured, discharging very foetid pus. In this case fæces were discharged through the wound on the 15th day after the operation. Dr. Atthill thought in this case it was due to the softening of the intestines at the seat of the pelvic abscess. This patient recovered perfectly, the fistula closing in about six months.

In the second case the fistula formed on the tenth day after the operation, the tumour being a small ovarian one, very firmly bound down by adhesions in the left inguinal fossa. An operation to cure the fistula was performed nearly a year after, which ended fatally. The third case was one which occurred seven days after vaginal hysterectomy for malignant disease. The fæces were discharged per vaginam for a few days; the fistula then closed.

The PRESIDENT mentioned a case which he had seen with Dr. Alfred Smith.

DR. MACAN asked if infection conveyed by the careless preparation of sutures, in not making them aseptic, could have had anything to do in the causation of fistula? He also suggested that the removal of portions of peritoneum might lead to the same result.

DR. SMYLY gave the details of several cases, in one of which he said he believed the accident was caused by a rubber tube being run down a drainage tube to aspirate the fluid; that the aspiration had caused the intestine to be so injured by being sucked into the tube, that perforation was the result.

DR. PARSONS asked if any method had proved satisfactory to determine, by examination of the discharge or otherwise, whether the fistula existed in the large or the small intestine?

MR. M'ARDLE, in reply, said that the case mentioned by the President supported the view that perforation existed before operation, as the tumour was resonant, and was not so tense as is usual when gaseous distension arises from decomposition within the cyst. Dr. Atthill's cases went to prove that spontaneous healing usually takes place when the fistula occurs in fixed portions of the intestine. In answer to Dr. Macan, Mr. M'Ardle said that he superintended the preparation of all ligature and suture material, so that infection could have nothing to do with the production of fistula. The removal of the peritoneum only affects the intestine by interfering with the vascular supply. Dr. Smyly's cases proved conclusively that surgical interference was unnecessary when the fistula was from the rectum. Mr. M'Ardle could not agree with the suggestion that suction through a rubber tube could produce a perforation of a strong-walled intestine like the rectum, while the constant pressure of the glass tube is very likely to cause a local necrosis. Dr. Parsons asked a very pertinent question about the diagnosis between fistula from the large and small intestine. Mr. M'Ardle referred to this in his communication, but did not explain fully that gaseous distension enabled one to determine the position of the opening, since, by passing the gas through a tube connected with a mercurial manometer, the large intestine is distended by a pressure of $1\frac{1}{2}$ lbs., while it requires a pressure of 3 lbs. to $3\frac{1}{2}$ lbs. to overcome the resistance of the ileo-cæcal valve, and before this occurs the large intestine is distinctly mapped out. This, taken in connection with the character of the discharge, shows accurately the site of the intestinal opening.

FRENCH AND GERMAN DIPLOMAS, 1889-90.

THE *N. Y. Medical Record* gives the following figures:—In the German Empire (45,000,000 inhabitants) the German Universities conferred, in 1889 and 1890, 1,125 diplomas of doctor of medicine, distributed as follows:—Berlin, 163; Bonn, 110; Breslau, 42; Erlangen, 69; Freiburg, 44; Giessen, 12; Göttingen, 25; Greifswald, 80; Halle, 36; Heidelberg, 22; Jena, 42; Kiel, 48; Königsberg, 26; Leipzig, 2; Marburg, 23; Munich, 114; Rostock, 6; Strassburg, 63; Tübingen, 22; Würzburg, 166. The number of doctors rejected in 1888-89 was 1,030; in 1887-88, 935; in 1886-87, 847; in 1885-86, 685. In France (38,000,000 inhabitants, not reckoning the colonies) the number of doctors rejected in 1889-90 by the six French faculties was 597, a decrease of 28 on the year preceding. Bordeaux rejected 60; Lille, 16; Lyons, 63; Montpellier, 46; Nancy, 26; Paris, 386.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, B.A., M.D., Univ. Dubl.; F.R.C.P.I.;
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VITAL STATISTICS

For four Weeks ending Saturday, January 30, 1892.

The deaths registered in each of the four weeks in the sixteen principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

TOWNS	Weeks ending				TOWNS	Weeks ending			
	Jan. 9.	Jan. 16.	Jan. 23.	Jan. 30.		Jan. 9.	Jan. 16.	Jan. 23.	Jan. 30.
Armagh -	28·0	35·0	28·0	63·0	Limerick -	29·5	35·1	51·9	50·5
Belfast -	31·6	33·6	33·0	28·3	Lisburn -	30·0	34·3	38·5	8·6
Cork -	34·6	42·2	47·1	28·4	Londonderry	29·8	22·0	28·3	31·4
Drogheda	35·1	35·1	22·0	13·2	Lurgan -	36·5	22·8	31·9	31·9
Dublin -	34·6	43·0	53·5	40·7	Newry -	32·2	28·2	24·2	24·2
Dundalk -	37·7	25·1	33·5	41·9	Sligo -	0·0	51·6	30·9	46·4
Galway -	7·6	45·3	64·2	37·8	Waterford -	35·0	27·5	60·0	45·0
Kilkenny	4·7	28·3	28·3	18·9	Wexford -	27·1	31·6	49·7	27·1

In the week ending Saturday, January 9, 1892, the mortality in thirty-three large English towns, including London (in which the rate was 32·8), was equal to an average annual death-rate of 28·7 per 1,000 persons living. The average rate for eight principal towns of Scotland was 24·9 per 1,000. In Glasgow the rate was 23·9, and in Edinburgh it was 24·0.

The average annual death-rate represented by the deaths registered during the week in the sixteen principal town districts of Ireland was 32·0 per 1,000 of the population (unrevised) according to the recent Census.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 2·2 per 1,000, the rates varying from 0·0 in ten of the districts to 4·4 in Drogheda—the 8 deaths from all causes registered in that district comprising 1 from diarrhœa. Among the 155 deaths from all causes registered in Belfast are 2 from measles, 8 from whooping-cough, 2 from enteric fever, 3 from diarrhœa, 16 from

phthisis, and 60 from diseases of the respiratory system. The 50 deaths in Cork comprise 1 from whooping-cough, 1 from enteric fever, 1 from diarrhœa, 5 from phthisis, and 17 from diseases of the respiratory system. Two deaths from influenza are specially reported by the Registrar of Belfast No. 3 District, 2 by the Assistant-Registrar of Belfast No. 4 District, 1 by the Registrar of Belfast No. 5 District, and 3 by the Registrar of Waterford No. 1 District.

In the Dublin Registration District the registered births amounted to 162—92 boys and 70 girls; and the registered deaths to 235—116 males and 119 females.

The deaths represent an annual rate of mortality of 35·1 in every 1,000 of the population according to the Census of 1891, being 2·0 above the mean rate for the first week of the last ten years. Omitting the deaths (numbering 3) of persons admitted into public institutions from localities outside the district, the rate was 34·6 per 1,000.

The number of deaths from zymotic diseases registered is 36, being 13 in excess of the average for the corresponding week of the last ten years, but 2 under the number for the week ended January 2. The 36 deaths comprise 13 from influenza and its complications, 10 from whooping-cough, 1 from diphtheria, 1 from ill-defined fever, 4 from enteric fever, and 1 from diarrhœa.

The weekly number of cases of enteric fever admitted to hospital, which had fallen from 24 in the week ended December 19, to 20 in the following week and to 17 in the week ended January 2, fell to 14, which is the lowest number of admissions in any week since that ended the 12th of September last. Twenty enteric fever patients were discharged, 3 died, and 106 remained under treatment on Saturday, being 9 under the number in hospital at the close of the preceding week.

The hospital admissions for the week include also 2 cases of measles, but no cases of scarlatina or of typhus were received. Two cases of measles, 7 of scarlatina, and 5 of typhus, remained under treatment in hospital on Saturday.

Sixty-seven deaths from diseases of the respiratory system were registered, being 6 over the average for the corresponding week of the last ten years, but 20 under the number for the week ended January 2. They comprise 53 from bronchitis and 13 from pneumonia or inflammation of the lungs.

In the week ending Saturday, January 16, the mortality in thirty-three large English towns, including London (in which the rate was 40·0), was equal to an average annual death-rate of 33·0 per 1,000 persons living. The average rate for eight principal towns of Scotland was 23·9 per 1,000. In Glasgow the rate was 24·6, and in Edinburgh it was 20·4.

The average annual death-rate in the sixteen principal town districts of Ireland was 37·5 per 1,000 of the population (unrevised) according to the recent Census.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 1·5 per 1,000, the rates varying from 0·0 in ten of the districts to 5·2 in Sligo—the 10 deaths from all causes registered in that district comprising 1 from diarrhoea. Among the 165 deaths from all causes registered in Belfast are 1 from measles, 5 from whooping-cough, 1 from diphtheria, 1 from enteric fever, 4 from diarrhoea, 23 from phthisis, and 65 from diseases of the respiratory system. The 61 deaths in Cork comprise 1 from enteric fever, 11 from phthisis, and 22 from diseases of the respiratory system.

In the Dublin Registration District the registered births amounted to 166—84 boys and 82 girls; and the registered deaths to 294—123 males and 171 females.

The deaths, which are 65 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 43·9 in every 1,000 of the population. Omitting the deaths (numbering 6) of persons admitted into public institutions from localities outside the district, the rate was 43·0 per 1,000. During the first two weeks of the current year the death-rate averaged 39·5, and was 5·9 over the mean rate in the corresponding period of the ten years 1882–1891.

Forty-nine deaths from zymotic diseases were registered, being 13 over the number for the preceding week and 22 in excess of the average for the second week of the last ten years. They comprise 29 from influenza and its complications (against 13 for the preceding week), 5 from whooping-cough, 2 from enteric fever, 1 from diarrhoea, and 2 from dysentery.

There has been a further decline in the number of cases of enteric fever admitted to hospital, the admissions numbering 8 only, against 14, 17, 20, and 24, respectively, for the four weeks preceding. Twenty-nine enteric fever patients were discharged, 2 died, and 83 remained under treatment on Saturday, being 23 under the number in hospital on Saturday, January 9.

The hospital admissions for the week include 2 cases of measles and 1 of scarlatina, but no cases of typhus were received. Four cases of measles, 8 of scarlatina, and 5 of typhus remained under treatment in hospital on Saturday.

Deaths from diseases of the respiratory system, which had fallen from 87 for the week ended January 2 to 67 for the following week, rose this week to 95—or 31 over the average for the corresponding week of the last ten years. The 95 deaths comprise 77 from bronchitis and 13 from pneumonia or inflammation of the lungs.

In the week ending Saturday, January 23, the mortality in thirty-three large English towns, including London (in which the rate was 45·7), was equal to an average annual death-rate of 35·4 per 1,000 persons living. The average rate for eight principal towns of Scotland was 27·2 per 1,000. In Glasgow the rate was 28·4, and in Edinburgh it was 21·8.

The average annual death-rate represented by the deaths registered in the sixteen principal town districts of Ireland was 43·9 per 1,000 of the unrevised population based on the Census of 1891.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 2·5 per 1,000, the rates varying from 0·0 in ten of the districts to 4·7 in Londonderry—the 18 deaths from all causes registered in that district comprising 3 from whooping-cough. Among the 162 deaths from all causes registered in Belfast are 4 from measles, 3 from whooping-cough, 1 from simple continued fever, 3 from enteric fever, 2 from diarrhoea, 23 from phthisis, and 63 from diseases of the respiratory system. The 68 deaths in Cork comprise 2 from whooping-cough, 1 from enteric fever, 1 from diarrhoea, 8 from phthisis, and 33 from diseases of the circulatory system. The 37 deaths in Limerick comprise 2 from whooping-cough, 3 from phthisis, and 21 from diseases of the respiratory system. Six deaths from influenza are specially reported by the Registrar of Waterford No. 1 District, and 1 death by the Registrar of Lisburn District.

In the Dublin Registration District the registered births amounted to 174—81 boys and 93 girls; and the registered deaths to 363—144 males and 219 females.

The deaths, which are 141 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 54·1 in every 1,000 of the population. Omitting the deaths (numbering 4) of persons admitted into public institutions from localities outside the district, the rate was 53·5 per 1,000. During the first three weeks of the current year the death-rate averaged 44·4 and was 10·9 over the mean rate in the corresponding period of the ten years 1882—1891.

Fifty deaths from zymotic diseases were registered, being 1 over the number for the preceding week and 24 in excess of the average for the third week of the last ten years. They comprise 1 from measles, 25 from influenza and its complications, 10 from whooping-cough, 2 from diphtheria, 5 from enteric fever, and 2 from diarrhoea.

Only 3 cases of enteric fever were admitted to hospital, being 5 under the number of admissions for the preceding week, and 11 under that for the week ended January 9. Twenty-four enteric fever patients were discharged, and 62 remained under treatment on Saturday, being 21 under the number in hospital at the close of the preceding week.

The hospital admissions for the week include, also, 4 cases of measles,

1 case of scarlatina, and 1 of typhus. Six cases of measles, 8 of scarlatina, and 1 case of typhus remained under treatment in hospital on Saturday.

Deaths from diseases of the respiratory system amount to 127, being 32 over the number for the preceding week and 65 over the average for the third week of the last ten years. They comprise 90 from bronchitis and 20 from pneumonia or inflammation of the lungs.

In the week ending Saturday, January 30, the mortality in thirty-three large English towns, including London (in which the rate was 41·1), was equal to an average annual death-rate of 32·1 per 1,000 persons living. The average rate for eight principal towns of Scotland was 24·7 per 1,000. In Glasgow the rate was 26·0, and in Edinburgh it was 22·4.

The average annual death-rate in the sixteen principal town districts of Ireland was 34·9 per 1,000 of the population (unrevised) according to the recent Census.

The deaths from the principal zymotic diseases registered in the sixteen districts were equal to an annual rate of 1·9 per 1,000, the rates varying from 0·0 in nine of the districts to 7·0 in Armagh—the 9 deaths from all causes registered in that district comprising 1 from typhus. Among the 139 deaths from all causes registered in Belfast are 1 from typhus, 5 from whooping-cough, 1 from simple continued fever, 3 from enteric fever, 3 from diarrhoea, 19 from phthisis, and 45 from diseases of the respiratory system. The 41 deaths in Cork comprise 2 from whooping-cough, 1 from enteric fever, 3 from phthisis, and 18 from diseases of the respiratory system. Among the 36 deaths in Limerick are 2 from whooping-cough, 1 from diarrhoea, 2 from phthisis, and 17 from diseases of the respiratory system. The 20 deaths in Londonderry comprise 1 from whooping-cough. Four deaths from influenza are specially reported by the Registrar of Waterford No. 1 District, 4 by the Assistant-Registrar of Dundalk District, 2 by the Registrar of Wexford District, and 1 by the Interim Registrar of Cork No. 8 District. The Assistant-Registrar of Dundalk District states—"The influenza epidemic is very much on the decline, very few fresh cases having come under our notice."

In the Dublin Registration District the registered births amounted to 178—84 boys and 94 girls; and the registered deaths to 278—134 males and 144 females.

The deaths, which are 53 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 41·5 in every 1,000 of the population. Omitting the deaths (numbering 5) of persons admitted into public institutions from localities outside the district, the rate was 40·7 per 1,000. During the first four weeks of the current year the death-rate averaged 43·7, and was 10·2 over the mean rate in the corresponding period of the ten years 1882-1891.

The number of deaths from zymotic diseases registered is 42, being 16 over the average for the corresponding week of the last ten years, but 8 under the number for the week ended January 23. The 42 deaths comprise 30 from influenza and its complications (an increase of 5 as compared with the number for the preceding week), 5 from whooping-cough, 3 from enteric fever, and 1 from dysentery.

Eight cases of enteric fever were admitted to hospital, being 5 over the admissions in the preceding week and equal to the number of admissions in the week ended January 16. Eight enteric fever patients were discharged, 1 died, and 61 remained under treatment on Saturday, being 1 under the number in hospital at the close of the preceding week.

The hospital admissions for the week include, also, 3 cases of measles, 1 case of scarlatina, and 2 cases of typhus. Eight cases of measles, 7 of scarlatina, and 3 of typhus remained under treatment in hospital on Saturday.

Deaths from diseases of the respiratory system, which had risen from 95, for the week ended January 16, to 127 for the following week, fell to 81, but this number is 19 in excess of the average for the corresponding week of the last ten years. The 81 deaths comprise 61 from bronchitis, 16 from pneumonia or inflammation of the lungs, and 2 from croup.

METEOROLOGY.

*Abstract of Observations made in the City of Dublin, Lat. 53° 20' N.
Long. 6° 15' W., for the Month of January, 1892.*

Mean Height of Barometer,	-	-	-	29·857 inches.
Maximal Height of Barometer (on 25th, at 3 p.m.),				30·484 „
Minimal Height of Barometer (on 16th, at 2 p.m.)				29·125 „
Mean Dry-bulb Temperature,	-	-	-	38·5°.
Mean Wet-bulb Temperature,	-	-	-	37·2°.
Mean Dew-point Temperature,	-	-	-	35·1°.
Mean Elastic Force (Tension) of Aqueous Vapour,	-			·209 inch.
Mean Humidity, - - - - -	-	-	-	88·0 per cent.
Highest Temperature in Shade (on 29th)	-			54·0°.
Lowest Temperature in Shade (on 10th),	-			22·2°.
Lowest Temperature on Grass (Radiation) (on 10th),				16·0°.
Mean Amount of Cloud, - - - - -	-	-	-	63·6 per cent.
Rainfall (on 20 days), - - - - -	-	-	-	1·698 inches.
Greatest Daily Rainfall (on 16th), - - - - -	-	-	-	·618 inch.
General Directions of Wind,	-	-	-	W., N.W., S.W.

Remarks.

An inclement, cold, and cloudy month.

A period of cold, which was ushered in by frequent snowstorms early in the month, lasted, with slight and temporary intermissions, until the

23rd, when, as in January, 1891, the southwesterly type of weather became permanently established over Western Europe, strong S.W. to W. winds, high but variable temperature, and frequent showers and gales prevailing day after day to the end of the month. To this decided change is due the fact that the mean temperature was only $2\cdot6^{\circ}$ below the average, notwithstanding the cold of the first three weeks of the New Year.

In Dublin the arithmetical mean temperature ($38\cdot8^{\circ}$) was decidedly below the average ($41\cdot4^{\circ}$); the mean dry bulb readings at 9 a.m. and 9 p.m. were $38\cdot5^{\circ}$. In the twenty-seven years ending with 1891, January was coldest in 1881 (M. T. = $32\cdot2^{\circ}$), and warmest in 1875 (M. T. = $46\cdot6^{\circ}$). In 1867 the M. T. was $35\cdot7^{\circ}$, and in 1865 it was $37\cdot8^{\circ}$. In 1871 and in 1886 the M. T. was $37\cdot9^{\circ}$; in 1879 (the "cold year"), it was $35\cdot3^{\circ}$. In 1888 the M. T. was $42\cdot1^{\circ}$; in 1889 it was $42\cdot4^{\circ}$. in 1890 it was $44\cdot5^{\circ}$; and in 1891 it was $40\cdot1^{\circ}$. As a general rule, January in Dublin is not colder, but a shade warmer, than December. This is owing to the full development in January of a winter area of low pressure over the Atlantic, to the northwestward of the British Isles, and to a resulting prevalence of S.W. winds in their vicinity. January, 1892, proved an exception to this rule, the M.T. being $4\cdot2^{\circ}$ below that of December, 1891 ($43\cdot0^{\circ}$).

The mean height of the barometer was 29·857 inches, or 0·017 inch below the corrected average value for January—namely, 29·874 inches, and as much as 0·228 inch below the mean for January, 1891—namely, 30·085 inches. The mercury rose to 30·484 inches at 3 p.m. of the 25th, and fell to 29·125 inches at 2 p.m. of the 16th. The observed range of atmospherical pressure was, therefore, as much as 1·359 inches—that is, a little less than one inch and four-tenths.

The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was $38\cdot5^{\circ}$, or $3\cdot8^{\circ}$ below the value for December, 1891. Using the formula, *Mean Temp.* = *Min.* + (*max*—*min.* $\times \cdot 52$), the M. T. becomes $38\cdot9^{\circ}$, compared with a twenty-five years' average of $41\cdot5^{\circ}$. The arithmetical mean of the maximal and minimal readings was $38\cdot8^{\circ}$, compared with a twenty-five years' average of $41\cdot4^{\circ}$. On the 29th the thermometer in the screen rose to $54\cdot0^{\circ}$ —wind, W.; on the 10th the temperature fell to $22\cdot2^{\circ}$ —wind, N.W. The minimum on the grass was $16\cdot0^{\circ}$ on the last-named date.

The rainfall was 1·698 inches, distributed over 20 days. The average rainfall for January in the twenty-five years, 1865–89, inclusive, was 2·200 inches, and the average number of rainy days was 17·3. The rainfall, therefore, was considerably below the average, while the number of rainy days was equally above it. In 1877 the rainfall in January was very large—4·322 inches on 25 days; in 1869, also, 4·258 inches fell—on, however, only 18 days. On the other hand, in 1876, only ·406 of an inch

was measured on but 9 days; and in 1880 the rainfall was only $\cdot 563$ of an inch on but 8 days. In January, 1886, $3\cdot 244$ inches of rain were measured on as many as 26 days; in 1887 ("the dry year"), $1\cdot 816$ inches fell on 16 days; in 1888, $1\cdot 247$ inches on 9 days; in 1889, $2\cdot 213$ inches on 16 days; in 1890, $2\cdot 975$ inches on 21 days; and in 1891, only $\cdot 672$ of an inch on 14 days.

Solar halos were seen on the 15th and 21st. Lunar halos were seen on the 9th and 11th. There was an aurora borealis on the night of the 5th. The atmosphere was foggy on the 18th and five following days, as also on the 31st. High winds were noted on 15 days, reaching the force of a gale on six days—the 7th, 10th, 16th, 27th, 28th, and 29th. Hail fell on the 7th and 10th, and snow or sleet on the 3rd, 6th, 7th, 8th, 9th, 10th, and 14th. Temperature exceeded 50° in the screen on 6 days, compared with only 5 days in January, 1891, 17 days in January, 1890, and 8 days in January, 1889; while it fell to or below 32° in the screen on 15 nights, compared with 7 nights in January, 1891, 1 night in January, 1890, and 3 nights in January, 1889. The minima on the grass were 32° , or less, on 25 nights, compared with 21 nights in January, 1891, 15 nights in January, 1890, and 16 nights in January, 1889.

At the beginning of the month the weather was cold but fine. Very inclement, winterly weather held during the week ended Saturday, the 9th, which proved to be the coldest experienced in Dublin since the present winter began. The type of distribution of atmospherical pressure was markedly cyclonic in the N. and N.E., anticyclonic in the S.W. of Europe. A series of deep depressions passed southeastwards across Scandinavia and the Baltic, while a succession of secondary, or subsidiary, depressions travelled in the same direction across the British Islands. Hence fresh or strong winds and gales from W.S.W. to N. were felt in Scotland and Ireland, where snow, hail, and sleet fell in large quantities on several days. On Tuesday, the 5th, a temporary rise of the thermometer occurred in front of one of the depressions and drizzling rain fell in Dublin, but next day, after rain and snow, the weather cleared, becoming fine and cold. At night a heavy fall of snow occurred, and this was followed on Thursday afternoon by a downright "blizzard." On Friday, also, snow-storms occurred over nearly the whole of Ireland, and on Saturday a sharp frost prevailed, which became intense in the evening. In Dublin the mean height of the barometer was $29\cdot 764$ inches, pressure ranging between $30\cdot 261$ inches at 9 a.m. of Monday (wind N.W.), and $29\cdot 232$ inches at 4 p.m. of Thursday (wind W.). The corrected mean temperature was $34\cdot 2^{\circ}$, the mean dry bulb readings at 9 a.m. and 9 p.m. being $33\cdot 0^{\circ}$. The screened thermometers rose to $45\cdot 4^{\circ}$ on Tuesday and fell to $24\cdot 0^{\circ}$ on Saturday, when the grass minimum was $17\cdot 8^{\circ}$ at 9 p.m. The rainfall (almost entirely in the form of snow and hail) was $\cdot 283$ inch on

five days. Of this amount $\cdot 104$ inch fell on Friday. The prevailing wind was N.W. Aurora borealis was seen on Tuesday night, and a lunar halo appeared on Saturday evening.

Very cold, inclement weather continued through the week ended Saturday, the 16th, but in Ireland a decided thaw set in on Friday and was followed by a gale from S. to S.E. and heavy rain on Saturday. Up to this time the changes of atmospherical pressure over North-Western Europe were very erratic and irregular. On Sunday a well defined depression lay over Brittany and Normandy, and caused a strong N.E. wind on the east coast of Ireland, where a temporary thaw set in, accompanied by hail showers and some thunder and lightning at 10 p.m. In the early morning of this day the frost had been very intense in Central Ireland—at 8 a.m. the thermometer read 13° at Parsonstown, and even in the city of Dublin temperature had been down to $22\cdot 2^{\circ}$ in the screen and to $16\cdot 0^{\circ}$ on the ground. Monday was again very cold, and at night frost returned. Both the barometer and thermometer now became very unsteady and so continued until Friday, when an extensive and deep depression began to “edge in” from the Atlantic. This caused steep gradients for southerly winds, a rise of temperature, and heavy rain on Saturday. In Dublin the mean height of the barometer was $29\cdot 645$ inches, pressure ranging between $30\cdot 095$ inches at 9 a.m. of Monday (wind N.) and $29\cdot 125$ inches at 2 p.m. of Saturday (wind S.E.). The corrected mean temperature was $34\cdot 4^{\circ}$, the mean dry bulb reading at 9 a.m. and 9 p.m. was $34\cdot 5^{\circ}$. The screened thermometers rose to $41\cdot 6^{\circ}$ on Saturday, having fallen to $22\cdot 2^{\circ}$ on Sunday. The rainfall amounted to $\cdot 749$ inch on three days, $\cdot 618$ inch being measured on Saturday. The wind was variable in direction.

The week ended Saturday, the 23rd, witnessed the gradual establishment of a warm southwesterly current over the whole of the British Islands, while the weather remained extremely cold in Russia, Scandinavia, and Central Europe. The period opened with a gale from S.E. and heavy rain in Dublin, but the wind moderated early on Sunday morning, and a spell of calm, damp, foggy, dull weather set in, lasting until Thursday. The fog was particularly dense on Tuesday morning, when temperature was slightly below freezing point in the screen. On Thursday the south wind freshened in Ireland, blowing a moderate or fresh gale on the southern and western coasts. The last two days were changeable and rainy or showery at times. On Saturday a very decided rise of temperature took place, the thermometer exceeding 50° in Dublin for the first time since December 29, 1891. On the Continent the cold was very intense during the week. At Munich the thermometer fell to 3° on Thursday morning, and at Haparanda, on the Gulf of Bothnia, the minimal temperatures were -13° , -17° , -7° , -14° , -17° , -15° , and -19° (?) respectively. In Dublin the mean height of the barometer was

29·759 inches, pressure ranging between 29·444 inches at 9 a.m. of Sunday (wind S.E.) and 29·979 inches at 9 p.m. of Wednesday (wind calm). The corrected mean temperature was 40·0°. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 39·6°. The screened thermometers rose to 51·8° on Saturday, having fallen to 29·0° on Thursday. Rain fell in measurable quantity on four days—the total amount being ·344 inch, of which ·168 inch was referred to Friday. The atmosphere was often calm, but S.E. Winds prevailed at the beginning, and S.W. winds at the close of the week.

As regards the week ended Saturday, the 30th, the change to milder weather which began in the course of the previous week was completed in the period now under review—the mean temperature of which was considerably above the average. Throughout the week the barometer was highest over the Atlantic to the southward of Ireland and over the Bay of Biscay; lowest over the Norwegian Sea. The gradients, were, therefore, for westerly winds; and they were particularly steep on Friday and Saturday. At 8 a.m. of Friday the barometer readings decreased from 30·67 inches at Biarritz to 28·87 inches at Bodö in the N.W. of Norway. On Saturday morning the reading at Biarritz was 30·64 inches; at Christiansund in Norway, it was 28·45 inches, or 2·19 inches lower. At first the weather was rather cold, but on Tuesday it became very mild and so continued to the end—Friday was the warmest day of all, for the thermometer rose to 58° at Aberdeen, 55° at Donaghadee, 54° in Dublin, and 53° in London. It is not a little remarkable that intense cold held in Russia during the week, the thermometer, for example, reading —35° at Moscow at 8 a.m. of Wednesday. From Tuesday until Saturday the wind blew strongly—at times with the force of a fresh gale—from S.W. or W. In Dublin the mean height of the barometer was 30·163 inches, pressure ranging from 30·484 inches at 3 p.m. of Monday (wind, S.W.) to 29·815 inches at 9 a.m. of Wednesday (wind, S.W.). The corrected mean temperature was 45·8°. The mean dry bulb temperature at 9 a.m. and 9 p.m. was 45·4°. The screened thermometer rose to 54·0° on Friday, having fallen to 35·9° on Monday. Rain fell on six days in measurable amount, but the quantity was not large—only ·143 inch, of which ·074 inch was referred to Wednesday. The prevailing winds were W. and S.W.

Sunday, the 31st, was fine but cloudy. In the afternoon, the weather became very soft and mild.

In Dublin, the rainfall up to January 31, 1892, has amounted to 1·698 inches on 20 days, compared with a twenty-five years' (1869–1889) average of 2·200 inches on 17·3 days.

At Knockdolian, Greystones, Co. Wicklow, only 1·045 inches of rain fell on 15 days. The heaviest falls in 24 hours were ·200 inch on the 16th, and ·170 inch on the 17th.

PERISCOPE.

ARMY MEDICAL STAFF.

THE following is the official list of successful candidates for commissions in the Medical Staff of Her Majesty's Army, at the examination held in London in February, 1892 :—

Order of Merit	Names	No. of Marks	Order of Merit	Names	No. of Marks
{ 1	Hinge, H. A.	3,160	14	Jones, T. P.	2,830
{ 2	M'Dermott, T.	3,160	{ 15	Marder, N.	2,810
3	Bray, H. A.	3,140	{ 16	Thurston, H. S.	2,810
4	Hodgens, C. O'C.	3,095	17	Lewis, R. C.	2,795
5	Slayter, E. W.	3,070	18	More, L. P.	2,790
6	Erskine, W. D.	3,020	19	Faichnie, F.	2,760
7	Tyrrell, A. F.	2,945	20	Walker, G. S.	2,730
{ 8	M'Naught, J. G.	2,940	21	O'Reilly, W. H.	2,710
{ 9	Smyth, W. J.	2,940	22	Mansfield, G. S.	2,705
10	Chambers, J. G.	2,910	23	Ryall, W. P.	2,695
{ 11	Austin, R. F. E.	2,900	24	Thompson, A. G.	2,670
{ 12	Moore, G. A.	2,900	25	Read, H. W. K.	2,665
13	Condon, E. H.	2,870			

EXAMINATION OF CANDIDATES FOR HER MAJESTY'S ARMY AND INDIAN MEDICAL SERVICES.

Natural Sciences.—Dr. Allman—Tuesday, 9th February, 1892—from 4 p.m. till 6 p.m.—[N.B.—The replies to be written with the ink provided, and not with a pencil or pale ink.] Zoology—1. Refer to its sub-kingdom and class an animal with the following characters, and give examples :—Body with transverse segmentation ; a ganglionated ventral chord ; head, thorax, and abdomen distinctly separated ; respiration by trachea. 2. What are the essential characters by which the *cœlenterata* are distinguished as a separate group of the animal kingdom ? Give one or more examples of a *cœlenterate* animal. 3. Give (qualitatively) the composition of cellulose, and adduce from the animal kingdom some instance to show that cellulose is not, as formerly supposed, exclusively confined to plants. Botany—4. Mention any instance known to you in the life-history of a plant which illustrates the law of Alternation of Generations. 5. What are the principal substances which may be deposited in the walls of the vegetable cell so as to give it rigidity and increase its power

of resisting organic decomposition? Cite some instances of plants in which cells so constituted occur. 6. Refer to its natural order a plant with the following characters, and give one or more examples:—Leaves alternate without stipules; calyx formed of two sepals which are caducous; corolla with four petals; stamens numerous, inserted on the receptacle; fruit a single-celled capsule with parietal placentæ; seeds numerous with oily albumen. Physics—7. Explain the formation of dew. 8. State the evidence on which we affirm the former existence of glaciers in places where they are no longer to be found. 9. What is meant by the “Torricellian vacuum?” On what physical properties does the existence of this vacuum depend?

Anatomy and Physiology.—Sir Joseph Fayrer.—Monday, 8th February, 1892—from 10 a.m. till 1 p.m.—1. Describe the inferior maxillary bone, giving an account of the muscles, ligaments, and other parts of importance connected with it. 2. Describe the origin, course, distribution, and functions of the musculo-spiral nerve. 3. Describe the structure, anatomical relations and functions of the large intestine. 4. Describe the origin, distribution, and communications of the portal vein; give an account also of the character and composition of the blood contained in it, and the office it performs in the animal economy. 5. Describe the structure, anatomical relations, and connections of the peritoneum.

Medicine.—Sir William Aitken.—Tuesday, 9th February, 1892—from 10 a.m. till 1 p.m.—1. A case for analysis and commentary:—Private W. R., 4th Battalion 60th Royal Rifle Brigade, had seven years' service when he died on the 25th of July, 1865, at Montreal. He was then thirty years of age; had been a hard liver, intemperate, and frequently a prisoner. He had been four years at the station (Montreal) at which he died. In 1859 he suffered from hæmorrhoids, but generally was at his duty and not sickly. Early in July, 1865, he complained of diarrhœa, which was prevalent among the men at the time. For this affection he had medicine on two or three occasions, and reported himself relieved thereby. On the morning of the 14th of July he was admitted into hospital. His face was blanched, his lips bloodless, and his general aspect that of a man in the first stage of cholera. He complained then of nausea and diarrhœa. A diaphoretic stimulating draught containing an anodyne was administered, and the patient put to bed. The next day he complained of tenesmus and a feeling of fulness in the rectum. He had been two or three times during the night to the night-stool, but had passed only six ounces of fluid blood. The examination of the abdomen by manipulation caused no pain, nor revealed any abnormality; and no signs of hæmorrhoids could be detected. The day following admission some feculent matter was passed. It was consistent in substance but pale in colour, and with it came away another discharge of blood. On the 17th (fourth day after admission) a large enema of luke-

warm water was injected into the rectum, and an enormous discharge of fæces followed. The matter passed was pale, somewhat of the consistence of thick oatmeal porridge. In quantity it more than half filled the night-pan, and it was accompanied as before by a large flow of blood. During the three following days the symptoms were very mild. He still passed blood, and on two occasions scybala, but he had no pain or sickness of stomach, nor other symptoms of a definite kind. Astringent medicines, such as *pil. plumb. acet. c. opio*, and enemata of warm water, together with purgatives, such as *pil. rhei co.* with taraxacum were administered to check the bleeding, and bring on a healthy motion from the intestines. The bowels got rid of small portions of hardened fæces; but every effort was accompanied with the usual flow of blood. On the morning of the 23rd (tenth day after admission) the symptoms continued the same as before. A small piece of hardened fæces had come away, and blood also as before. A dose of castor-oil and turpentine was given, but the dose was followed by no satisfactory result. The bleeding certainly did not return, but in the afternoon vomiting set in, which before had been absent; and on the morning of the 25th (twelfth day after admission) the patient died. The vomites contained nothing that could be called stercoraceous. There was dark green bile mixed with the beef tea, or milk, or wine, or whatever he had swallowed beforehand, but no feculent matter. About twelve hours before death head-symptoms set in. The pupils became enormously dilated, the bladder refused to act, jactitation ensued, and the vomiting, which had abated for some time, returned. He died comatose. [Discuss fully the pathology of this case, as to symptoms, nature, treatment, and probable *post mortem* appearances.] 2. Write what you know regarding the composition, mode of origin, the effects, the symptoms and treatment of gall-stones and bile concretions. 3. Name the common intestinal worms found in man. State what you know as to how each of the parasites you name gets access to the body of man; the symptoms of the presence of each; and the treatment curative and prophylactic of each of them. 4. Write what you know regarding the differential diagnosis of facial-nerve paralysis (Bell's Paralysis.) 5. Name the official preparations in the British Pharmacopœia which contain arsenious acid. State the amount of arsenic in each; and the doses of each. Describe the action of arsenic; and the symptoms which follow its use in extreme doses.

Chemistry.—Dr. Allman.—Tuesday, 9th February, 1892—from 2 p.m. till 4 p.m.—1. Organic food substances may be divided into two classes—the nitrogenous and the non-nitrogenous. Give some examples of each of these classes. 2. What is the result of heating ammonium chloride with quicklime? Write down the equation which expresses the reactions in this process. 3. Write down in their order the formulæ of the series forming the marsh gas series, beginning with that of marsh gas and

carrying it as far as five terms. Give in a formula the quantity by which each term of the series differs from its predecessor.

Surgery.—Mr. Pollock.—Monday, 8th February, 1892—from 2 p.m. to 5 p.m.—1. Describe the relative symptoms by which dislocation of the head of the femur, on the dorsum of the ilium, may be diagnosed from dislocation into the sciatic notch. Also describe the measures requisite to reduce each dislocation. 2. By what symptoms may an impacted fracture of the neck of the femur be diagnosed from either of the above-named dislocations? What treatment is best in such an injury? 3. What are the most common causes of inflammation of veins? Describe the effects of such inflammation when implicating one of the lower limbs; and the treatment to be pursued under its various stages. 4. Given a case of stone in the bladder. State under what conditions, and circumstances, would the operation of crushing—the lateral operation—or the suprapubic operation be preferable. 5. A man has a hard chancre of three or four weeks' duration. What treatment should be adopted in such a case? What are the probable results, as regards secondary, or tertiary, complications? And, provided the patient is unmarried, what advice should be given as regards matrimony? 6. Describe the preliminary symptoms, and subsequent progress of a case of senile gangrene. To what arterial changes is this form of gangrene generally due? And what is the best treatment to be adopted in the progress of such a case?

BIRD SURGERY.

WE are indebted to the *Medical Record* (N.Y.) for the following “interesting observations relating to the surgical treatment of wounds by birds,” contained in a communication made to the Physical Society of Geneva by M. Fatio. They are worthy of the columns of the *Spectator*:—“He quotes the case of the snipe, which he has often observed engaged in repairing damages. With its beak and feathers it makes a very creditable dressing, applying plasters to bleeding wounds and even securing a broken limb by means of a stout ligature. On one occasion he killed a snipe which had on the chest a large dressing composed of down taken from other parts of the body and securely fixed to the wound by the coagulated blood. Twice he had brought home snipe with interwoven feathers strapped on to the site of fracture of one or other limb. The most interesting example was that of a snipe both of whose legs he had unfortunately broken by a misdirected shot. He recovered the animal only on the day following, and he then found that the poor bird had contrived to apply dressings and a sort of splint to both limbs. In carrying out this operation some feathers had become entangled around the beak, and not being able to use its claws to get rid of them, it was almost dead from hunger when discovered. In a case recorded by

M. Magnin, a snipe which was observed to fly away with a broken leg, was subsequently found to have forced the fragments into a parallel position, the upper fragments reaching to the knee, and secured them there by means of a strong band of feathers and moss intermingled. The observers were particularly struck by the application of a ligature of a kind of flat-leaved grass wound round the limb, of a spiral form and fixed by means of a sort of glue."

BRITISH MEDICAL SERVICE.

WE have received from the authorities the following list of surgeons on probation of the medical staff of the British Army who were successful at both the London and Netley examinations. The prizes are awarded for marks gained in the special subjects taught at the Army Medical School. The final positions of these gentlemen are determined by the marks gained in London added to those gained at Netley, and the combined numbers are accordingly shown in the list which follows:—Feb. 1st, 1892. Combined Marks:—1. Pilcher,^a E. M., 6,094; 2. Johnson, H. P., 5,421; 3. Beyts, W. G., 5,219; 4. Stalkartt, H. A., 4,883; 5. Dunn, H. N., 4,832; 6. Withers, S. H., 4,794; 7. Morphey, E. M., 4,744; 8. Anderson, E. C., 4,648; 9. Tyacke, N., 4,619; 10. Holt, R. H. E. G., 4,562; 11. Mitchell, L. A., 4,549; 12. Fleming, C. C., 4,533; 13. Hennessy, J., 4,506; 14. Martin, C. B., 4,501; 15. Buchanan, G. J., 4,395; 16. Lawson, C. B., 4,366; 17. Hughes, G. E., 4,344; 18. Kelly, J. F. M., 4,337; 19. Crawford, G. S., 4,286; 20. Alexander, J. D., 4,260.

DETERMINATION OF SEX.

A NOTE in *Lo Sperimentale*, of Florence, informs us that Dr. Serrano Montanel, of Valparaiso, read a paper before the last Chilian Medical Congress on the procreation of either sex at will. After four years' observation he had satisfied himself that we can pronounce upon the sex of an unborn foetus if we know the number of menstruations which have occurred between the preceding delivery and the present pregnancy. If between the birth of one baby and the conception of the next an even number of menstruations have taken place, the second will be of the same sex as the first; if an uneven number, of different sex. This theory assumes the identity of menstruation and ovulation, which few accept; and also that ova discharged are of alternate sexes.

THE CEREBELLUM.

DR. COURMONT, of Lyons—we learn from the *N. Y. Medical Record*—is about to publish a work disputing the generally-accepted views on the functions of the cerebellum. Prof. Folet has put forward a notice of it in advance in the *Bulletin Médical* (No. 45, 1891). Courmont believes

^a Gained the Montefiore second prize.

that the cerebrum and cerebellum are similar in function as well as in structure. The cerebellum is a centre for the registration of certain impressions, and for the origin of various psychical manifestations. It is the seat of the unreasoning mental processes—as love, hatred, joy, sorrow, &c. As the cerebrum is the organ of sense, so is the cerebellum the organ of sentiment, and accordingly the latter is proportionally larger in women. The publication of M. Courmont's views and arguments will be received with interest.

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

Pure Volatile Eucalyptus Oil.

THIS essential oil, distilled from the leaves of the citron-scented eucalyptus (*Eucalyptus maculata*, var. *citriodora*), is by far the finest, most fragrant, and most delicate specimen of eucalyptus oil which it has been our good fortune to examine.

The citron-scented gum-tree (*Eucalyptus citriodora*) is a comparatively rare variety of the "spotted gum." It grows only in the Port Curtis (Gladstone) district of Queensland. Infinite pains are taken in the distillation of the oil. In the first place, the trees are judiciously pruned, so as to retard the growth of the wood and to promote that of the young leaves. These yield the finest oil and are the most fragrant. They are picked free from stalks, in order to exclude resinous, terebinthinate, and other crude matter, and are then carefully distilled by Mr. A. Jefferies Timbury's Eucalyptus Oil Company at Gladstone, Queensland.

Towards the close of 1890, Messrs. Schimmel & Co., of Leipzig, reported as follows upon this oil:—"It possesses a specific gravity of 0.873 at 150° C. When distilled, about three-quarters goes over between 205° and 210°, while smaller quantities boil under and over these temperatures. The fraction 205°-210° consists almost entirely of pure citronellon. When shaken with a solution of bisulphate of sodium, the mixture becomes hot and changes to a fairly solid mass. From this, after washing with ether, pure citronellon separates on decomposition with soda solution."

"Timbury's Eucalyptus Oil" is intended for both internal and external use. The dose for an adult is from one to five drops, which may be taken on a lump of sugar. A few drops sprinkled on a pocket-handkerchief may be inhaled from time to time with the object of relieving a common cold, or the more serious influenza, or whooping-cough. Of the relief afforded by the oil used in either way we can speak from practical experience.

There can be no doubt that in this elegant preparation, also, we possess a valuable antiseptic, disinfectant, and deodorising agent.

RECLAMATION BY DR. THOMAS DUTTON.

WE have received the following letter from Dr. Dutton, in reference to the Review of his work on "Indigestion" which appeared in the number of this Journal for February, 1892 :—

"CRAVEN HOUSE, NORTHUMBERLAND-AVENUE,
"LONDON, Feb. 15th, 1892.

"J. W. MOORE, B.A., M.D., F.R.C.P.,

"Editor of THE DUBLIN JOURNAL OF MEDICAL SCIENCE.

"SIR,

"I have been forwarded THE DUBLIN JOURNAL OF MEDICAL SCIENCE, in which I see a review of my work on "Indigestion," and, as the sender remarks, it is a most *unfair review*, and has the appearance of a tinge of malice about it.

"This is the opinion of every medical man I have shown it and the work to.

"I grant some of the text has been too hastily passed through the press, but that it is of no use to the profession or the general reader I entirely disagree, and tell the reviewer he is emphatically wrong. I can prove it by dozens of letters, both from the profession and the general public.

"How can you reconcile the review in question with the review in the *British Medical Journal* of Feb. 6th (one of the highest authorities on medical literature in the world) :—

"'This is a very *useful book*, full of *sound good sense* and *wise sayings*.' Again: 'The book is *clear, concise, and well arranged*.' Again: 'The process of digestion, the various causes of indigestion, are described with *perspicuity and energy of expression*. Much *sensible advice* is given.'

"Or with the review in *Public Opinion*, one of the leading weekly papers :—

"'To those who suffer from attacks of what is now termed our national disease, the appearance of Dr. Dutton's *exhaustive brochure* should be *especially welcome*.' Again: 'The cause, symptoms, and general treatment of the complaint are *skilfully dealt with* in the pages of his volume.'

"All reviews, except the one I am writing about, are in the same strain.

"I am afraid the reviewer belongs to that conservative class of physicians that does not like medical works written in a popular way, hence his acrimony. I am sure he does not wish to really injure the work in question, and he will be glad to learn the first edition is nearly sold. I am always careful to consider just criticism when correcting my books.

"I cannot imagine what will be the opinion of the worth of reviews by those who read the *British Medical Journal* as well as THE DUBLIN JOURNAL OF MEDICAL SCIENCE. I, as a very successful writer on many subjects, venture, however, to predict that the work will flourish when time with the reviewer and author will be no more.

"I am, with greetings,

"Faithfully yours,

"THOMAS DUTTON."

It is a matter of regret to us that Dr. Dutton should take in ill part any criticisms we felt justified in making. We can assure him that our reviewer, far from bearing malice against him, had never even heard of him until he read his book on "Indigestion." Dr. Dutton has been informed by "dozens of letters" that his book is excellent. This is a matter of opinion. Our reviewer, both before and since writing the review complained of, has shown the book to several intelligent non-professional friends, who considered that whether any benefit was to be derived from reading such a work was certainly open to question. The author himself had misgivings as to its reception, for he says, at page 10, "I know this work will not be approved of by some professional brethren."

We are not responsible for the opinion of a work formed by any medical journal or lay periodical other than the DUBLIN JOURNAL OF MEDICAL SCIENCE. We are only responsible to our readers, and it is our duty to give them our candid opinion of books sent to us for review.

We are mere common-place writers, and as journalists have nothing to do with the future, "when time with the reviewer and author will be no more;" so that when Dr. Dutton rises on his prophetic wing and exclaims with Horace, "Exegi monumentum ære perennius," we can follow him no longer.—ED.

CONTAGIOUSNESS OF LEPROSY.

THE *N. Y. Medical Record* of 7th November contains a valuable paper on leprosy by a medical missionary stationed in Madura, Southern India, the Rev. Dr. Frank van Allen. We desire here to record his conclusion as to the communicability of the disease about which there was a scare some months ago. "To one," he says, "who has observed leprosy carefully, the opinion must be irresistible that the great majority of the human race are entirely safe though associating daily with lepers." Again:—"It is almost absolutely certain that the great majority of the human race cannot contract the disease by contact however free." He cites the experience of the Madras Leper Hospital which shelters over 250 patients. "Most of these are in a condition to require daily dressing of their ulcers. Three dressers are here employed for this purpose. The dressers use the naked hands in doing this work, handling and rubbing the ulcers most intimately. One dresser has been employed in this work for twelve years, another ten years, and another five years. None of them have contracted the disease." We may add that the Mattei treatment had been tried in three cases:—"They have all become very much emaciated, which is uncommon in leprosy, and notably weakened. One of the patients, however, praises the treatment and announces his wish to resume it as soon as he is able to stand it again, as his sufferings were much less while taking it."

In Memoriam.

JOHN BLYTH, M.D. ST. AND., L.R.C.S. EDIN.

WE leave the beaten track to chronicle with regret the death of an old and valued friend in a ripe old age. On Saturday, January 23, 1892, DR. BLYTH died at his residence, the Slopes, Kingstown, Co. Dublin, aged 76 years.

Qualified so far back as 1833, DR. BLYTH spent the first few years of his professional life in his native country—Scotland. Forty-four years ago, however, he came to Dublin, and here he continued to practise until his fatal illness supervened, to the dismay of a numerous and influential *clientèle* and to the sorrow of a wide circle of friends.

A disciple of Hahnemann throughout his career, DR. BLYTH nevertheless was on the best of terms with his more orthodox professional brethren. This was due, in the first place, to his sound practical knowledge of medicine. He was in every sense a well-educated physician, and had a thorough acquaintance with anatomy and pathology. A liberal-minded man, also, he never obtruded his views upon others, while as occasion required he did not hesitate to use therapeutical means of the more ordinary type if only he was assured that it was for the benefit of his patients that he should do so—he was, in a word, an eclectic in the best sense of the term.

A thorough gentleman—well read, courteous, dignified, yet affable, and kind, DR. BLYTH won for himself hosts of friends, both within and without his profession. A man of the utmost probity, he shed a lustre on every relation of life. And so it happens, that as husband, father, friend, he equally is mourned for and his loss deplored.

THE DUBLIN JOURNAL

OF

MEDICAL SCIENCE.

APRIL 1, 1892.

PART I.

ORIGINAL COMMUNICATIONS.

ART. XII.—*Dystocia due to a Cyst in the Liver of a Fœtus.*^a By
WM. S. BAGOT, M.D. Univ. Dubl., L.M., &c.; Ex-Senior
Assistant Physician to the Rotunda Hospital.

THE specimen which I have the honour of submitting to the notice of the Academy is, to my mind, one of extreme interest, not only from a pathological, but also from an obstetrical, point of view; for the records of cases where congenital cysts of any size have been found in the liver are very rare, and still rarer are records of such, or indeed of any tumour of the fœtal liver causing dystocia.

The history of the case, from which this specimen was taken, is as follows:—

About 6 a.m. on May 12, 1890, word was brought to me, then Senior Assistant Physician to the Rotunda Hospital, that two of the intern students were in attendance on a woman in the Extern Maternity Department. It was her second pregnancy, her first having terminated normally at full time. She had now been in labour thirteen hours. The head of the child had been born immediately after the arrival of the students; but the birth of the body was delayed, and, though they had tried both expression and traction, they were unable to complete its delivery. I accordingly hurried to their assistance, and found, as they had reported, the head, somewhat smaller than normal, completely born, and the child apparently dead, the delay in the delivery having proved fatal. The woman stated that she was about $8\frac{1}{2}$ months pregnant. Her

^a Read before the Section of Obstetrics, Royal Academy of Medicine in Ireland, on Friday, Nov. 27th, 1891.

body was covered with a papular eruption of syphilitic character. I could elicit no history of any specific sores having been on the genitals. I then administered chloroform, and proceeded to palpate her abdomen. I found the uterus much larger, and more tense than is usual at full term, though some of the liquor amnii must have escaped on the rupture of the membranes, and on percussion a very distinct fluctuation thrill could be obtained.

The back of the child could with difficulty be mapped out, looking forward, and to the left in the first position. It at once occurred to my mind that I had to deal with a case of hydrops amnii, complicated by some abnormality of the foetal abdomen, such as ascites, or an ovarian tumour, &c. Accordingly, after a thorough disinfection, I passed my hand up posteriorly along the anterior surface of the child, and on reaching the uterine cavity, which still contained an abnormally large quantity of liquor amnii, I found, in accordance with my expectations, that the abdomen of the foetus was enormously distended and elastic. I now tried to let off as much of the liquor amnii as possible, but the attempt met with little success, for the great elastic belly of the foetus filled out the lower uterine segment, acting like a ball valve. I then perforated the child's abdomen close to the xiphoid cartilage by means of a Smellie's scissors, after which a great quantity of clear yellow fluid poured out, mixed with the liquor amnii, which now came away freely. The abdomen having collapsed, I easily delivered the child, a male, the placenta following almost immediately. After a great deal of trouble we succeeded in persuading the female relatives present to allow us to remove the child. The husband, luckily, was absent. On reaching the Rotunda Hospital I stitched up the hole made by the perforator, and by means of an aspirator filled the abdomen, from which all the fluid had drained away. I had to inject 60 ounces of fluid before it assumed its original degree of tension.

The following measurements were then taken:—Length of foetus, 45 cm.; girth at level of umbilicus, 59.75 cm.; distance from ensiform cartilage to pubes, 39.5 cm.

I then photographed it, unfortunately not very successfully, owing to haste, for the father having returned, and found that the child had been removed, had followed us and demanded its restoration. Finding it was impossible to pacify him, we hastily performed the autopsy. On opening the abdomen it was found that the chief abnormality existed in the liver. The rest of the viscera were normal, as far as could be made out from a hurried examination of them *in situ*, with the exception of the kidneys, which were small. Accordingly we removed the liver and kidneys for further investigation, and restored the body to the relatives.

On examining the liver we found the right lobe comparatively normal, perhaps slightly small, and on the under-surface near the right edge a

small lobe marked with parallel ridges. The gall bladder was absent, and the lobus quadratus consequently not marked off. Hepatic artery and vena portæ normal. Hepatic duct present, but rather small. It was not possible to trace a branch to the left lobe with any certainty, but it was probable that the left duct was torn from its connections on account of the haste with which the autopsy had to be performed. The duodenal end of the duct was not observed.

The whole of the left lobe was converted into a large simple cyst, capable of containing 48 ounces of fluid. It was smooth on its surface and marked by ramifications of vessels and ducts. The inner surface of the cyst wall was also smooth, except that it was covered by a whitish film, which could easily be stripped off. The fluid from the cyst, having all drained away at the time of perforation, could not be examined. Histologically the hepatic tissue was normal. The wall of the cyst was formed of two layers, about equal in thickness. One next the cavity of the cyst consisted of a rather dense fibrous connective tissue; and outside this, over the greater part of the cyst wall, a layer of equal thickness, consisting of hepatic tissue. Where this is absent, its place is taken by large vessels and ducts. Near the junction of the two layers numerous small ducts could be seen; but these in no case at all approach the cavity of the cyst, they open into the large ducts, mentioned above as accompanying the vessels. No epithelium could be demonstrated lining the interior of the cyst. The kidneys, though very small, were normal in structure.

Now, on referring to the literature on the subject, I can find records of only two cases, which appear to me to bear any points of resemblance to that which I have just described.

The first, reported by Dr. Witzel (*Centralblatt für Gynäkologie*, No. 24, 1880), where he records a case, which occurred in the obstetrical polyclinic of Prof. Gusserow. During the summer semestrium Dr. Witzel observed a woman, aged thirty-six years, who was in labour. It was her second pregnancy. Some years previously she had borne a normal child at full term. The midwife not being able to determine the presentation, sent for his assistance. External examination showed that there existed a longitudinal lie of the child, and he could feel on the left side a rounded part; but above the symphysis pubis no hard tumour corresponding to the head could be found; accordingly he thought it was most probably a breech presentation. On examining *per vaginam* he found a soft part, and towards the left a pedunculated sac, bigger than a walnut. Behind this there was an opening, into which the tip of the finger could be put. On one side of this

opening he could feel a resistant ridge, and behind this a resistance covered by soft parts. He consequently diagnosticated it as a second position of the breech. No progress was made in the labour during the next eighteen hours. After this, owing to some strong pains, the child was born so far that a malformed head was seen in the vulva. While the patient's husband was bringing word to Dr. Witzel, a neighbouring doctor was called in, who tried to effect delivery by pulling on the head till he lacerated the soft parts of the neck as deeply as the spine, and almost completely separated one arm. Dr. Witzel, on his arrival, seeing the malformation of the head, made further examination with the patient under chloroform. He could still feel the rounded part in the fundus of the uterus; it seemed to correspond to a second head. However, on examining *per vaginam*, and passing up his hand, he found that this was in reality the short legs lying close to one another, and he could feel the belly blown out like a balloon. He therefore decided to perforate it. Upon this being done, three litres of yellow fluid poured away, and the child was then easily delivered.

The examination of the child showed the following:—

Rudimentary external female genitals.

Thick short upper extremities, with six fingers on each hand, and rudiment of a seventh on the left.

Six toes on each foot; genu varum and pes varus of both extremities; hemicephalous, greater part of the skull being absent, presenting pedunculated membranous sac; palpebral fissures small; orbits small; no eyeballs; nose flat; complete absence of intermaxillary bone; situs inversus viscerum totalis; cystic liver, the left lobe being, with the exception of a small portion of the anterior margin, completely converted into a cyst with irregular surface. This cyst communicated by an opening, admitting two fingers, with a smaller one in the right lobe; the other lobes were normal; the gall-bladder was empty. The cystic duct was solid, while the common duct, which opened into the cyst in the right lobe, was dilated to the thickness of one's thumb, and ended blindly towards the duodenum; but in the duodenum the usual papilla could be made out. There was a Meckel's diverticulum. Each kidney was the size of a man's fist, and cystic, with small cysts the size of a pea; the ureters were not dilated; the bladder was empty. There existed other malformations, which I need not delay to describe.

The second case, reported by Lomer (*Virchow's Archiv*, 99), I think worthy of note from the fact that the fœtus presented signs

of congenital syphilis, though the cystic liver did not cause any obstacle to delivery.

Here there was obliteration of the cystic and right hepatic ducts. The gall-bladder was collapsed and obliterated; the left lobe of the liver was normal; the right lobe was rough, convoluted, like a brain, and degenerated, with cysts in it; a smooth cyst projected from the surface of the liver; it was the size of a cherry, and communicated with other cysts in this mass of scar tissue; the left duct, the hepatic artery, and the vena portæ were normal; the cysts contained a yellow fluid; the fœtus was macerated, and its bones presented syphilitic lesions. Lomer considered the malformation to be due to a primary developmental defect, or else to syphilitic perihepatitis.

Turning now to the obstetrical bearing of this case, which, though not of such general interest, is none the less of great importance, I find that the records of cases where tumours of the liver have acted as obstacles to delivery are extremely few. Winkel, in his "Text-Book of Obstetrics," one of the most recent and complete works on the subject, states that "the description of those tumours of the liver, which have been causes of delay in or obstacles to delivery, is somewhat defective." He mentions records of four cases—viz., (1) Haase (N. Z. XI., 262); (2) Müller (Hohl, p. 286); (3) Nöggerath (Deutsche Klinik, 1854, No. 44; Wochenschr. IV., 458); (4) Schlesinger (Hohl, p. 289). The first three, according to Winkel, "resolve themselves into either hepatic physconia, or a lymphatic tumour of the liver." In Nöggerath's case the liver was the seat of a congenital carcinoma, and weighed 2½ lbs; it measured 8·75 inches in width, 3 inches in thickness, and 6 inches in height. The liver in Müller's case, a lymphatic tumour, weighed 4 lbs. These four cases, together with Witzel's, which has been overlooked by Winkel, and the case which I now report, would amount to but five cases in which I have been able to find records of any obstacle being offered to delivery by a tumour of the liver. The head of the child presented in all the cases, with the exception of that reported by Haase. In it the fœtus presented obliquely, with the head towards the left, and the cord and left arm prolapsed. The liver in this case weighed one pound. The child was a girl, 19·5 inches long, and 9 lbs. in weight.

ART. XIII.—*A Case of Opium-Poisoning.*^a By JOHN J. BURGESS, F.R.C.S.I., L.R.C.P.I.; late Assistant Surgeon, Richmond Hospital, Dublin.

WHEN we consider that opium and its alkaloid is the most frequently used drug in medical practice, and when we see, on the one hand, the idiosyncrasy which some have for its smallest dose, and, on the other, the facility with which the general public can procure from any chemist large quantities of the tincture, we must be astonished at the comparatively few cases of poisoning which are reported.

Laudanum is sold to any adult person by the apothecary, provided he gives a satisfactory explanation there and then of the use he intends to make of it. Although it is out of the province of this paper to enter into the legal question of the sale of poisons or to suggest a remedy, still I feel bound to allude to the practice as highly dangerous to society which puts into the hands of the dipsomaniac or melancholiac an instrument capable of producing such disastrous consequences.

The case I am now going to bring before the notice of this Section is one of acute poisoning by opium, and I would not take up the time of the Academy were I not convinced that there is something to be learned from the details of treatment in each case of this kind, and that we may profit by each other's experiences in order to be prepared when called on, as each one of us may be at any hour of the day or night, to take up charge of a similar unhappy case.

CASE.—A. B., aged thirty years, of good physique, but intemperate habits, was observed by a servant to drink a two-ounce measure-glassful of laudanum at 11 p.m. on the night of the 18th of December, 1887. The servant informed the husband a few minutes afterwards. He was disinclined at first to believe the statement, but about thirty minutes after the supposed time of his wife's swallowing the laudanum, seeing she became drowsy, he called in the assistance of a medical student who was living in the house.

I now insert the account of this gentleman :—

“My attention was called to A. B., after being informed she had drunk two ounces of laudanum. I found her in the following condition—a marked condition of drowsiness with contracted pupils. Although I could see from her appearance she had evidently taken the drug to some extent, I was not inclined to believe she had taken so large a

^a Read before the Medical Section of the Royal Academy of Medicine in Ireland on Friday, March 11, 1892. [For the discussion on this paper, see page 336.]

quantity as the servant represented. So I got some strong tea prepared and made her swallow, after some persuasion, about half a pint of the infusion. A. B. was at this time walking about in a somewhat dazed condition. After taking the tea she retired to bed, but, not feeling easy regarding her, I remained in my room reading. About 1 a.m. the husband came down in a state of alarm, saying she was in a deep sleep, from which he had been unable to arouse her by shaking or calling her by name. I found her lying, as he described, in a condition of sleep, with slow and stertorous breathing. After some difficulty I succeeded in arousing her, but on discontinuing my efforts she again sank into the same lethargic condition. When aroused she was just able to say, 'Please, let me sleep.' Her breath smelled of laudanum. Her pupils were contracted to an extreme degree, giving the eyes a peculiar appearance. With her husband's assistance, each of us taking an arm, we forced the patient to walk up and down the room. I endeavoured to make her swallow some ether, but without avail. At last, seeing she grew worse in spite of my efforts, and her husband, who had been assisting me in the attempt to arouse her, now completely broke down, thus leaving me to my own resources, I sent him for medical assistance, while I continued to force her up and down the room, dragging her the greater part of the time, despite which she rapidly sank into a comatose condition."

I saw the patient at 3 a.m. She was then in a collapsed condition. Efforts had been made to keep her walking, which at that time consisted of dragging her across the room, as the power of motion seemed completely gone. She was still capable of being roused by slapping her face and chest with a wet towel, but in another second she sank into a comatose sleep. Her pupils were veritable pinholes; her breath gasping; pulse imperceptible; surface of the body cold.

I had hardly entered the room when her breathing ceased. All our efforts could not arouse consciousness, and life appeared extinct. Seeing she was too far gone to use the stomach-pump, not having any atropin with me, I at once started artificial respiration, getting the medical gentleman who was there to inflate her lungs. We gave her hypodermics of ether and enemata of brandy and tea.

After two hours' hard work she became slightly conscious, was able to speak a few words, and to swallow some tea.

I then passed a catheter, and drew off a pint and a half of urine, which distinctly smelled of laudanum. This was, however, a brief respite. Although we did all we could, in a few minutes she again sank into a comatose condition. I then tried cold affusion to her head, and continued the artificial respiration, with hot jars to her feet, axillæ, thighs, and sinapisms to her legs, epigastrium, and, I might say, everywhere.

The enemata of brandy and tea with the hypodermics of ether were administered by either of us when the other was working the artificial

respiration. Our efforts did not produce any effect; except now and then a gasp there was no sign of life.

At 7 a.m. I inserted hypodermically $\frac{1}{100}$ grain sulphate of atropin; a second injection fifteen minutes afterwards; a third in half an hour; and a fourth in thirty minutes afterwards. Her condition before giving the atropin was—1. An attempt at respiration, due, I believe, to artificial means; 2. An imperceptible pulse; 3. A dry skin; 4. Pupils somewhat dilated, which was due to the failure of her vital power. These injections I firmly believe, as you shall see from the subsequent history, did no good.

She was seen at 9 a.m. by the late Dr. Corley and Professor Hamilton. The outlook was very bad. Dr. Corley was inclined to think there was no use continuing, but I determined as long as there was the least sign of life to do all I could, hoping that a certain amount of the poison would be eliminated by the kidneys if we could keep her alive long enough.

We continued the artificial respiration, and gave another $\frac{1}{100}$ grain of atropin at 12. The patient's condition then was the same; there was an occasional feeble effort at respiration.

At 1 p.m. I thought all was over; her lower jaw dropped; all attempts at respiration ceased. I was on the point of giving up when I remembered I had sent for a magneto-electric machine early in the morning. Getting one pole over the back of the neck and the other on the frontal region, I set the current working. After what appeared a long time I heard a gasp, followed by a second. This gave me new hope, so I commenced again the artificial respiration. The current appeared to have set the respiratory apparatus working, as the feeble respirations continued until 2 p.m., when the same happened—the face, which was all along pale, became dusky; the eyes open with dilated pupils, and the lower jaw dropping, while all respiration had ceased.

After the last success with the electricity I did not despair, so putting one pole over the epigastrium, and the other to the nape of the neck, I turned on the current. The gasping respiration again commenced. So getting my assistant to follow each effort with the arms raised over her head, I kept the current on for twenty minutes. At that time the feeble respirations became for the first regular, four to the minute. Fearing lest the electrical stimulus might be exhausted, we again continued the artificial respiration alone. For two hours the respiratory efforts were very feeble, but regular.

At 4 p.m., greatly to our joy, they rose to 8 per minute, and became gradually stronger until 5 30, when, the breathing being 13 to the minute, the conjunctival reflex appeared, and artificial respiration, after fourteen hours, was stopped.

Later on the patient was able to take nourishment; the pupils acting to light. I left her at 2 a.m. under the care of a nurse, with directions to awaken her every hour and give her some hot milk.

The further history of the case is of no interest. She suffered some trouble from abscesses after the ether injections; but when I saw her some weeks ago—nearly four years after that memorable night—she was in perfect health.

I wish to draw your attention in reference to the above case to the following points:—

As to the quantity taken, we found out afterwards it was three ounces—that is, 99 grains—of opium. This we discovered by comparing the known quantity of laudanum which was in the bottle at 10 p.m. with what we found there in the morning, no one having access to the room where it was left in the meanwhile. The difference was about three ounces. This bears out the servant's statement as to having seen the patient drink a two-ounce measure full of laudanum. An ordinary two-ounce measure, as you know, when filled to the brim contains about three and a half ounces.

I am aware that much larger doses of opium have been recovered from. In "Guy's Hospital Reports" it is mentioned that a patient took five ounces of laudanum without producing the slightest poisonous effects. Dr. Bowstead, of Wycombe Regis, reports a very remarkable case of recovery in a lady who had drunk eight ounces of laudanum and was not seen until fourteen hours after the poison had been taken, owing to her having locked herself in her bedroom. There are other cases reported of recoveries from similar quantities.

But when we come to cases in which the medical man who attended was able to ascertain for himself the amount taken without any source of error, and compare them with the former accounts in which hearsay evidence of the patient's friends was taken, we must be struck with the fatal results in comparatively small quantities.

Amongst many cases I will merely instance one recorded by the late Mr. Kirby, in which the fatal dose was one ounce; and a second, by Dr. Cleveland, of Maida Vale, where, although the young man was seen almost immediately after swallowing two ounces of Battley, his stomach washed out, and all the other aids tried, the case became rapidly fatal.

One peculiar thing about my case was that there was no vomiting, which generally follows so large a quantity of laudanum taken at once.

I may here remark the patient was, from all I could ascertain,

not given to taking the drug. She had once or twice a draught of it, about 20 minims, prescribed for some dyspeptic trouble. So there is no doubt she took a very large poisonous dose, and was not previously tolerant of opium.

The next point is the secondary asphyxia of opium-poisoning which occurred here, you may remember, after two hours' artificial respiration. Six hours after the poison was taken she recovered consciousness and was able to speak, but in a few minutes sank again.

This is a condition I find referred to without any explanation being given in Taylor's book on Poisons; and on looking up the literature I find this was a very bad symptom, nearly all the cases it was present in died. The late Mr. Kirby, of this city, mentioned the case of a lady who recovered after fourteen hours, was able to speak to those around her, but suddenly became unconscious, and died four hours afterwards.

I would venture to suggest that this depends on a secondary absorption. The first quantity taken into the system had a paralyzing effect, so that when the condition improved a residue of the poison which remained in the stomach was taken up.

As to the treatment, there is no doubt that the stomach should have been at once washed out when the first symptoms appeared. It was the uncertainty of the quantity which kept the friends of the patient from sending at once. When I arrived it was too late, for three reasons:—

1. Her respiration had stopped.
2. Probably the greater part of the laudanum was absorbed.
3. The danger was from the opium in her blood, not from what remained unabsorbed.

Next as to cold douching; this, I believe, did more harm than good. I would only employ it when there is a moderate case with warm skin, and not in a collapsed condition like the present.

The atropin was of no avail, and had no effect either on the heart or respiration. In fact, the respiration was worse after its use.

In my opinion this patient owes her life to three things:—

1. The artificial respiration continued for fourteen hours.
2. The interrupted current, without which the first would have, I believe, failed.
3. The ether with enema, which latter, getting some fluid into the system, caused a certain amount of diuresis.

In conclusion, I would beg to point out, from the extreme hopeless nature of this case, that we ought to be very slow to give up a case of opium-poisoning if there is the faintest sign of life, and even when that appears extinct, not to discontinue our efforts for at least twenty minutes after apparent death.

ART. XIV.—*The Position of Dispensary Medical Officers in Ireland, and Suggestions for the Removal of their just Grievances.*^a

By THOMAS DONNELLY, M.D., M.A.O. Univ. Dubl.; F.R.C.S.I.;
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THE subject I venture to bring under your notice is one specially suited for discussion by the State Medicine Section of this Academy, because the dispensary medical officers of Ireland are *ex-officio* medical officers of health in their respective districts.

At present the dispensary medical officers are taking advantage of the opportunities offered by the press to ventilate their grievances and bring under the notice of the Government suggestions for the removal of the most glaring injustices from which they suffer.

As you are doubtless aware, the Irish Medical Association, the British Medical Association, and also associations throughout the country, are acting vigorously for this object. It would, indeed, be strange and impolitic for this Academy, which embraces the profession in Ireland as a whole, not to elicit the views of its members, and by suggestions assist those who are intrusted with drafting the bill to be laid before Parliament at an early date.

Having been medical officer to a country district for nearly two years and to a city district for almost eight years, as well as being assistant physician to one of the largest clinical hospitals in Ireland, I have had opportunities from this varied experience of observing the working of medical charities from many points of view.

Many laymen and, I am sorry to say, a few members of our profession, speak of and act towards dispensary doctors as if the latter did not belong to the guild of medicine, but were a separate and distinct body of public servants.

To dispel this curious illusion, and bring about more harmonious action of the profession in the relief of human suffering, I shall

^a Read in Section of State Medicine of the Royal Academy of Medicine in Ireland, Thursday, March 3, 1892. [For the discussion on this paper see page 330.]

endeavour to put the position of the dispensary medical officer in his public capacity before you in as few words as possible. To do so I must first explain that the present system of administering medical relief in hospitals as well as poor law dispensaries, with which latter only I shall now deal, is unjust—first to the profession as a whole, and secondly to the medical officer.

First, as regards the whole profession. You all know that many of the most eminent members of our guild began life as dispensary doctors, and at the present time many earnest, able, and very highly distinguished men are in the poor law service. Hence it is not the *personnel* that is to blame for the position held by the medical officers in the estimation of the public. It is due principally to the indiscriminate issue of medical relief tickets by irresponsible persons to those not entitled to relief at all. Our skill and advice are marketable, so that the public value them as other things, at the price that must be paid for their use. Hence, a dispensary doctor in his own district, because his services can be obtained for nothing by almost every person in his district, is held in lower repute than he is elsewhere, or would be therein if dishonest persons were not permitted to take advantage of what is intended for the poor. Now, the profession at large must suffer in reputation by the lowering of the status of 848 fully qualified members thereof. Every member of the profession loses money indirectly also, because the dispensary doctor is frequently obliged to attend cases gratuitously that should, and would, yield fees either to the medical officer in his private capacity or some other practitioner.

With the object of making this clear I will relate two cases out of a great number that I can vouch are true and not exaggerated. One day a respectable-looking person presented a black ticket at a dispensary for advice and medicine, which ticket was obtained in the following way. In the course of conversation with Mr. —, a warden, who kept a shop, she mentioned that she was under the care of Dr. —, to whom she was paying five shillings per visit. He spoke in the highest terms of the dispensary doctor, and recommended her to consult the latter, adding that it would cost her nothing, as he had tickets, one of which he then gave her. Was that fair to the medical officer or just to the practitioner—in other words, the profession?

On another occasion the dispensary doctor got a red ticket to visit an old lady, whose appearance and surroundings indicated

the reverse of destitution. He prescribed for the old lady, at the same time informing her that his duty as medical officer was with the poor, and endeavoured by his manner to indicate that he did not consider her an object of charity. Before leaving he requested her to acquaint him at the dispensary if she did not get better, so that he might again visit her. She did not subsequently communicate with him, so that he did not visit her any more. Some time afterwards another doctor informed the medical officer that he attended the same old lady, who was possessed of a considerable sum of money in the funds and other securities. This shrewd physician demanded double the amount he expected her to pay, thinking that the old lady would be pleased at cutting down his fee. To his astonishment she paid him forthwith, and was profuse in her expressions of gratitude for his kindness. He attended her for about a year, during which time he received over £35 in fees from her. She had also been paying for medical attendance before she sent the red ticket for the dispensary doctor.

I could multiply instances where the profession as a whole loses money by the abuse of medical relief, but doubtless in the discussion which, I trust, this paper will give rise to, many cases of imposition will be mentioned by the dispensary medical officers present which will prove very clearly the necessity that exists for some means being taken to protect the profession from the lowering of its status and loss of money. I trust that I have shown that it is the interest of us all to join hands in the endeavour now being made to prevent the abuse of medical relief.

Secondly, the system is very unjust to the conscientious, able medical officer, because the better he knows and does his duty the more work is thrown on his shoulders without increase of remuneration. This will appear quite plain from the following, which happens to be the case at present in two adjoining country districts with which I am acquainted:—

Dr. A., an able, conscientious M.D., who does his work well and has earned a good reputation in his district, has a large, laborious practice, for which he receives £125 per annum.

Mr. B., his neighbour, a doubly qualified licentiate, has a very indifferent reputation, but fortunately has private means, receives the same salary, £125 per annum for merely attending for an hour or so at the dispensary twice a week. Is it just that these two men should have the same salary?

I have been credibly informed of the following case, which

occurred in the country:—Dr. C. had been attending a farmer for some time on a red ticket, when one day he met his neighbour and friend Dr. D. at the patient's home. Dr. D. expressed surprise at meeting his neighbour there on a red ticket, and informed him that he received £2 for the visit, and was not aware of Dr. C.'s attendance. Now Dr. C. did not receive a fee at all, although the patient could afford to pay Dr. D., also a dispensary doctor, £2 for one visit, simply because it was possible to procure a red ticket for Dr. C., and the patient wished to save some expense, as was ingenuously told to myself on one occasion.

The injustice to the profession is greater in city districts, as tickets are issued by irresponsible shop assistants indiscriminately, whereby many practitioners who would be satisfied with a small fee are deprived thereof, as I have already shown. Owing to the great number of patients, and the tricks and devices resorted to in many cases, it is only after some time that the dispensary doctor becomes aware of the imposition. Of course frequently the fraud is not detected at all.

It may be said, why not get improperly issued tickets cancelled? Some do try this, the only legal method of preventing the improper issue of tickets, but, I fear, with indifferent success. One feels chary about asking to have tickets cancelled for three reasons:—

1. The attendance may have ceased before the patient's circumstances become known to the doctor, who feels that it might be unkind to pry into the affairs of perhaps very respectable, though poor, people.

2. The *onus probandi* is thrown on the doctor, which is most unfair. As you all know, it is very difficult to extract legal evidence from unwilling rogues. Hence he prefers to sacrifice the doubtful fee and avoid wasting time in making inquiries elsewhere.

3. The tribunal to which he must appeal is composed of the very men who issue the tickets or allow them to be issued, so that he asks a body to pass a vote of censure on its own members, which naturally it would, if possible, refrain from doing.

The public never seem to consider the anxiety and worry the medical officer suffers from, or that he is responsible for every call that may be made on him at any hour, day or night, during the entire year. If he takes a holiday he must provide and pay his substitute, unless he produces a medical certificate of illness or temporary incapacity. This expense, in conjunction with the

loss of his private practice, prevents many taking a holiday for years, and some in very poor districts could not afford to go away even if offered a temporary respite from duty.

When a medical officer becomes debilitated from old age or overwork he is afraid to resign, lest the guardians refuse to give him a pension, which they may or may not, most likely not, vote to him. The result, of course, is appalling cruelty to the medical officer and the poor entrusted to his care in cases, not very infrequent, where octogenarians and others suffering from incurable maladies struggle to do their duty, until Mors mercifully relieves them from torture inflicted on them by the working of a system which is supposed to be for the relief of suffering humanity.

So much has been written lately in the journals on this subject that it is unnecessary for me to trespass further on your patience by the recital of all the grievances from which the Irish dispensary doctor suffers, and shall conclude by mentioning what appears to me most urgently required in the relative order of importance.

1. Legal definition of a "poor person." A list of poor people entitled to medical relief made out annually by the clerk of the union, and forwarded to those entrusted with the issue of tickets.

2. Power to issue tickets to be given to responsible persons only.

3. A more simple and direct method of cancelling improperly issued tickets.

4. A salary of £200 per annum in towns where daily attendance at the dispensary is required; and £100 per annum in country districts, as attendance twice a week is in nearly all places sufficient. In addition to the above a mileage fee of 1s. per mile be paid on all visiting tickets, in order to have the remuneration vary in proportion to the work done and prevent unnecessary visits.

5. Pensions at the civil service rate after twenty years' service. Resignation to be voluntary with the medical officer up to 65 years of age, after which age retirement to be compulsory.

6. A proper residence, with dispensary and stabling, &c., attached, should be provided and maintained by the guardians for the medical officer free of rent and taxes so long as he continues in the service.

7. Dispensary doctors should be *ex-officio* medical officers to the workhouse hospitals of their districts, and should do duty there for at least a month at a time in rotation. This is more requisite in country than in city districts.

8. Thirty days' annual holiday should be granted irrespective of *bonâ fide* sick leave.

On Wednesday, February 17th, 1892, resolutions were passed at a conference held in the Royal College of Surgeons. They have my entire approval as far as they go, but I think the omission of an annual holiday, proper residence, and provision for attendance at the workhouse hospitals, are very much to be regretted.

In conclusion, I think it would be most desirable to have the service altogether remodelled, and a State department substituted which would embrace all public medical and allied work, with a sufficient salary to enable the medical officer to live independently of private practice, and free from the control of local shopkeepers and others. This, however, I fear, is utopian.

ART. XV.—*The Residential Disabilities of Medical Officers in Rural Districts.*^a By P. M. LAFFAN, Medical Officer, Killeen, Co. Meath.

I WILL endeavour in this paper to put before you briefly one of the principal obstacles that prevents the erection of medical residences more numerous throughout Ireland—namely, the lamentable defects of the “Dispensary Houses Act, 1879.”

Until this parody on constructive wisdom received Parliamentary sanction, one of the great disabilities under which medical officers laboured was the difficulty—I might say, rather, the impossibility—of procuring a proper residence in a central position in their respective districts. Many had to live in most inconvenient parts of their areas, and several had to occupy wretched dilapidated and wholly unsuitable houses.

The following is one of many illustrations that can be adduced:—Several years ago a medical man was appointed to a district in an adjoining county. He was facetiously made to promise to reside in the centre of the district, though there was no residence to be had in any part of it. With much difficulty, and not without considerable pressure having been brought to bear by the clergyman of the parish, he got one room in an old thatched house on the side of the road. Here he resided for three years, and then succeeded in getting the tenancy of a capacious residence,

^a Read, by permission, before the State Medicine Section of the Royal Academy of Medicine in Ireland, on Thursday, March 3, 1892. [For the discussion on this paper see page 330.]

which was suitable enough only that it was so far situated from the central cross-roads that it increased the number of miles to be annually travelled by nearly 700. Even so, he would have continued to live in it, as he had done for several years, but the owner requiring it for his own use some time ago, he again had to go back to the one room, where, still worse, the family were now unable to accommodate him for more than a fortnight. He then applied to the guardians for a labourer's cottage *pro tem.*, which they granted; but this concession was subsequently refused by the Local Government Board, as they considered it would be illegal to make any other use of those cottages than that for which they were originally intended. The medical officer, being on the horns of a dilemma, began to make arrangements for a wooden hut, when a kind-hearted gentleman in the neighbourhood, who partially resided in Dublin during the winter months, gave him accommodation in his castle until the ensuing summer. He was then promoted to the village publichouse, where he is now enjoying his *otium cum dignitate*.

There were, I am sure, many similar cases of great hardship throughout the country, and I know that in towns also medical men have often to encounter no small difficulties in getting fairly good houses.

Now, you may reasonably ask has not all this been remedied by the Dispensary Houses Act of 1879? I regret to say only to a moderate extent, in consequence of its malconstruction and many practical defects, the principal of which are:—

1st. It contains no clause, like the Labourers Act, for the compulsory acquisition of land, and the result is that some boards of guardians, though quite willing, have been unable to build dispensary residences owing to the difficulties of procuring sites. As the committee, even when eligible sites are available, can take only what is voluntarily offered, they are powerless to select a central position, and are, therefore, debarred from taking into consideration the requirements of the districts or the convenience of the medical officer from a geographical or population standpoint.

2nd. The rate of repayment at 5 per cent. is too high, and is bound to entail an annual loss to the union for 35 years, unless a very small structure be erected or an unreasonable rent be put on the tenant. This the guardians, in the interests of the ratepayers, naturally object to, and, consequently, many boards are inclined to shelve altogether, or to let die from inanition, applications for the

erection of dispensary residences. I need not remind you that under the Land Acts money is lent on a lower scale, and surely advances for a public purpose ought to be made not alone on an equality, but on still more advantageous terms than those made by the State to facilitate bargains between private individuals.

3rd. The principal defect of the Act, and the one which has been most instrumental in militating against its success, is contained in the 11th section of it—namely, a prohibition from taking a longer lease of the selected site than 60 years. I know not whether this was done—which is not probable—to indirectly bring pressure on the guardians to purchase rather than take a lease, or whether it is merely a clerical error of the draughtsman of the Bill which escaped the observation of the hon. members towards the small hours of the morning when they were weary from legislative toil and want of repose. Be that, however, as it may, there is one thing certain, that this unfortunate and ridiculous restriction has been the cause of occasioning delays, often for several years together, with an enormous expenditure in the way of law costs, as the guardians were by it compelled to purchase the fee, necessitating legal searches and other expensive methods of proceeding, which could have been avoided if they were empowered to accept long leases—a comparatively simple and cheap mode of acquiring land. Much money that might with advantage be spent on the buildings was thus wasted in another direction. The following is a striking illustration of this:—

The committee of one of the districts of a union agreed to erect a much-needed residence for their medical officer, and looked around for a site. They could have easily obtained several on leases varying from 60 to 999 years, containing the full quantity—five acres—permitted by the Act, but as they thought it would not be a good business arrangement to expend a large amount on a short term, they decided to procure the fee-simple of another site, and it happened that in the whole neighbourhood there was only one piece of land that could be obtained on that tenure. They agreed about the price with the legal representative of the reputed vendor, but when the title came to be investigated it was discovered that there was a plurality of ownership and almost endless complications besides; furthermore, those in whom the estate vested were not available for the execution of the deed of assignment—one of them was fishing in Norway, another ranching in the Western States of America, and a third trying to regain lost health in a

southern clime. The rest—and there were seven altogether—were scattered over Great Britain. The result of this untoward state of affairs was that the law costs amounted to over £150, and that the house was not completed for five years from the time the matter was first initiated, and the quantity of land that entailed all this waste of time and money did not exceed *one* acre, though, as previously mentioned, the committee could have obtained sites containing the full five acres on leases of 99 years or more at much smaller expense did the section permit them to so accept.

Another case exemplifying how severely handicapped the guardians and medical officers are by the limitation clause occurred quite recently. A certain board having disagreed with the head landlady as to the amount of purchase, entered into negotiations with the next in title—the representative under a fee-farm grant—took a 60 years' lease; and when the matter was put into the solicitor's hands the grantee, a generous lady, offered to give a lease for 999 years without any additional charge, which, by reason of the clause, the guardians were unfortunately precluded from accepting.

This last instance strongly emphasises the need that exists for retrospective legislation should the 11th section be rectified, so that in those cases where the guardians have already built on lands taken under the short tenure they will get the benefit of the corrections that will be made in the Act, thus enabling them to accept a lengthened lease in lieu of the comparatively short period of 60 years.

I will also direct your attention to another of the faults of the Dwelling Houses Act—namely, the omission from it of any section conferring legal authority upon boards of guardians to entertain the applications of workhouse medical officers in cases where those officers have been unable to rent suitable residences within convenient distances of their hospitals.

In conclusion, I would suggest:—

1st. That the Act be amended so that the guardians may take, subject to such exceptions as may be determined on, land by *compulsion*, for the erection of dispensaries and dwellinghouses for medical officers.

2nd. That the percentage charged by the Board of Works on the loans for building those residences be reduced to the minimum at which the State can lend money without financial loss by the

repayment being extended over a more lengthened series of years than is at present permitted.

3rd. That section 11 be altered so as to enable boards of guardians to take land on longer leases than the absurdly short period of 60 years only now by this Act allowed, thus avoiding the expenses and complications incidental to the acquirement of fee-simple property, for which latter the construction of the Act in its present form necessitates a preference.

4th. That this clause be made retrospective, so that pre-existing contracts may be brought within its scope.

5th. That medical officers of workhouses be admitted to the benefits of the new Act, the boards of guardians being invested with the powers and functions which are now divided between them and the dispensary committees.

6th. That boards of guardians and "owners" who are at *present* indebted to the Commissioners of Public Works under the existing Act, be allowed, should there be a revision of it, a re-adjustment of their contract with the latter body, which would enable them to obtain the advantages of whatever concessions Parliament may be pleased to grant in the way of lessening the annual rent-charge by the extension of the time for liquidating the loans.

I am convinced that if the defects touched upon be brought prominently forward and pressure actively exercised in the proper quarter, especially if supported by the weight and influence of this great Academic Institute, it will not fail in the near future to be productive of an amelioration of the Act that will be in keeping with progress and expediency.

ART. XVI.—*A Case of Recurrent Enteric Fever, followed by True Relapse.*^a By JOHN WILLIAM MOORE, M.D., Univ. Dubl.; F.R.C.P.I.; Physician to the Meath Hospital, Dublin.

THE present "Clinical Record" may well claim the attention of physicians, inasmuch as it refers to a case in which, not only did enteric fever recur in the same patient, but the recurrent attack was succeeded by a true relapse after an apyrexial period of eleven or twelve days.

In April, 1877, I attended with the late Dr. Alfred Hudson

^a Read before the Medical Section of the Royal Academy of Medicine in Ireland, on Friday, February 5, 1892. [For the discussion on this paper see page 238].

and Sir George Owens, a lad of fifteen years, who passed through a typical attack of enteric fever lasting 23 days—in which, however, constipation and not diarrhœa was the rule. In October, 1891, the same gentleman, at the age of twenty-nine, sickened of a fever which proved to be undoubted enteric fever. After running an acute course of 24 days, followed by a subfebrile period extending over another week, this attack was succeeded by convalescence, which seemed to be in all respects normal. On the eleventh or twelfth day, however, from the establishment of apyrexia, acute febrile symptoms again showed themselves, and for the third time in his life the patient passed through an attack of enteric fever.

The salient points are of course only given in the foregoing brief statement. The facts are as follows:—

CASE.—In April, 1877, W. H. P., a schoolboy, aged fifteen, was staying in the Co. Wexford, where he slept in a room situated near an offensive manure-heap. To this the patient himself attributed his illness, which began on Thursday, April 19, with a feeling of nausea at school. He returned home and went to bed. He at once lost all appetite, the sickness continued, but without vomiting. The following day diarrhœa set in after a dose of effervescing magnesia; this was in turn succeeded by constipation.

On Tuesday, April 24 (6th day), he was seen by Dr. Hudson, Sir George Owens, and myself. At 1 30 p.m.—pulse 94, resp. 34, temp. 103·3°. His tongue was furred, but moist; some sordes clung to the teeth. He was perspiring freely; there was no abdominal tenderness. Next day rose-spots appeared, and the fever ran very high, the thermometer marking 103·7° in the axilla at 6 p.m. At this time he was on an exclusively milk diet, and the bowels were obstinately confined.

On April 28th (10th day) I took this note at 6 p.m.:—“Has been more prostrate this afternoon—P. 86, Resp. 34, T. 102·7°. To have chicken-broth, claret, and this mixture:—

R. Extracti Cinchonæ Liquid. ʒii;
Acid. Hydrochlorici diluti, ʒii;
Tincturæ Cardamom. Comp., ʒss;
Aquæ Chloroformi, ad ʒvi.

M. ft. mist. Signetur: Half an ounce three times a day.”

On April 29 (11th day) the state of the patient was still less satisfactory—the tongue was drier and browner, more sordes had gathered on the teeth and gums; there was an icteroid tinge of the surface. He had not passed water since 8 p.m. of the previous day. The belly was fuller and more tympanitic; the area of splenic dulness was increased. Many

rose-spots were seen on the chest, abdomen, and arms. The favourable points about the patient were that he had slept well, and pulse, respiration, and temperature were all falling uniformly. At 3 p.m. he was hot and uncomfortable, owing to inaction of the bowels and retention of urine. I gave a large warm water enema, when quantities of solid and fluid fæces came away, and he passed water freely twice. The tongue was much coated at this time, and the papillæ were enlarged and fiery.

On May 2 (14th day) the temperature rose to 103.4° , and on the following day, after $4\frac{1}{2}$ hours' continuous sleep, the urine, which was dark-coloured and of high density (sp. gr. 1025), began to throw down copious deposits of urates. This occurrence was manifestly of the nature of a crisis, for the patient's state improved daily henceforward, although it was not until May 12th (24th day) that I was able to make the entry in my notes, "No fresh rose-spots." A period of subnormal pulse and temperature readings now followed—the pulse falling to 54 beats per minute, and the temperature to 96.5° on May 20th (32nd day). Two days previously I had made this entry—"Slept well, *whistled* this morning," not a bad sign of convalescence in a school-boy.

Soon after this the patient went to Cauterets in the Pyrenees, where his health was happily quite restored.

October 15, 1891.—On this day Mr. W. H. P., aged twenty-nine, now a barrister by profession, left Dublin apparently in good health, on a week's visit to a country house in one of the midland counties of Ireland. He returned on Thursday, Oct. 22nd, and two days later, in the evening, he first complained of feeling unwell. From this statement I conclude that Mr. P. probably contracted the fever in his town residence before he went on a visit—the most usual length of the period of incubation in enteric fever being a fortnight or thereabouts.

On Sunday, October 25th, the patient awoke with a stiff neck and a slight headache. Next day he went out, although feeling badly, and in the afternoon sat over the fire owing to an unconquerable chilliness. On Tuesday, the 27th, he was utterly unable to leave his bed. He spent the next three days in bed, attended by Dr. L. H. Ormsby, who found his morning temperatures 100° , his evening temperatures 101° , or slightly higher. Feeling rather better on Friday, the 30th—when both morning and evening temperatures were 98.5° —he got up at 3 30 p.m., and sat in an arm-chair at the fire, feeling very weak. At 7 p.m. he ate partridge on buttered toast for dinner, after which he spent a restless night, so that by the morning the temperature had risen to 101° , remaining at this point throughout the day. I saw him with Dr. Ormsby in the evening, and came to the opinion that the attack had probably arisen from over-fatigue in the country and indigestion. Having a vivid recollection of his enteric fever $14\frac{1}{2}$ years previously, I put aside the thought that it was the malady from which he was now suffering.

At 9 a.m. next morning (November 1) the temperature was 104° , the patient was coughing frequently, especially whenever he lay on his right side. He brought up mucous sputa, occasionally streaked (not tinged) with blood. Diarrhœa now set in—five motions of the colour and consistence of pea-soup occurred in the 24 hours ending at 9 a.m. of November 2, when the temperature was 103° . Shortly afterwards it rose to 103.7° , with a pulse-rate of 104, and respirations 30 to 32. He was ordered to be sponged in the morning, afternoon, and evening, and at midnight, while milk and lime-water, and chicken jelly, followed by crushed ice, were given alternately.

November 3 (11th day).—Rose-spots are visible to-day, both on the abdomen and on the back. The patient's dietary now consisted of 3 ozs. of boiled milk with 1 oz. of lime-water every third hour, and 2 ozs. of chicken jelly every sixth hour. Two turpentine capsules (containing 10 minims) were given every fourth, and a three-grain quinine pill every eighth hour. Crushed ice was allowed freely, and the tepid sponging was carried out as before.

November 4 (12th day).—Increasing bronchial trouble was treated by the free application of compound camphor liniment to the back and front of the chest, which was then enveloped in cotton wool, previously well warmed. The hip, back, knees, and other parts exposed to pressure were rubbed with spirit of camphor night and morning, and then dusted with "violet powder."

November 5 (13th day).—Temp. 103° . The only change in the treatment was to add one ounce of beef tea to each meal of chicken jelly.

November 6 (14th day).—Evidences of serious heart-failure now presented themselves. The cardiac sounds were weaker. The heart changed its position easily—when the patient turned from side to side, the heart "sagged" over to the dependent side. The area of pre-cordial dulness had increased laterally, and the radial pulse failed when the arm was held aloft. The patient spent a very restless night. Morning temperature, 103.2° . One ounce of brandy was given in teaspoonful doses during the day.

November 7.—A complaint of pain in the abdomen was met by the application of turpentine fomentations.

November 9.—We found the patient weak after a restless night, with some delirium. Ordered to have food every hour—either one ounce of hot milk with a teaspoonful of brandy, or $1\frac{1}{2}$ ozs. of mixed chicken jelly and beef tea with 2 teaspoonfuls of Brand's essence, washed down by half an ounce of old port.

On November 13 (21st day), rennet was ordered for a change, as the bowels were rather constipated.

November 15.—The yolk of an egg was put into a cup of tea morning and evening.

During the following few days enemata were administered to overcome constipation. On November 20 rusk was broken into the beef tea. The dietary now was:—A cup of tea and yolk of an egg at 9 a.m., a cup of beef tea at 11 a.m., a cup of custard at 1 p.m., a cup of rennet at 3 p.m., a cup of tea and egg at 5 30, a cup of beef tea at 8 p.m., and so on during the night, if awake.

November 22.—Sat up for a few minutes while bed was re-made; seemed wonderfully strong.

November 24.—Got thin bread and butter without crust morning and evening, with cup of tea; sat up in armchair for one hour.

November 27.—Walked into adjoining room, and sat there for two hours; temperature subnormal this morning.

November 29.—Walked down to the drawingroom to-day, and sat up for two hours; all medicine stopped, and plenty of nourishment given; porridge and cream at bed-time.

December 3.—Got minced chicken for first time to-day, and enjoyed it.

December 4.—Went out for half an hour in the carriage.

December 6.—Had filleted sole for dinner and baked apples, also a glass of wine.

December 8.—Patient's cough has disappeared; he eats and sleeps remarkably well; is gaining strength, but still looks thin, as most typhoid patients do in the stage of convalescence.

December 7, 1891.—The patient's temperature had been subnormal in the morning for three weeks. He had been downstairs, in apparently good health, and eating such solids as chicken, fish, and bread and butter. His only complaint was of constipation. Each morning about 10 o'clock he had one very small motion, always composed of lumps, passed either singly or sometimes in a hard, large mass. This was duly reported as well as marked on the daily chart.

In the afternoon of this day the patient saw his first visitor, a friend who stayed with him from 4 to 4 45 p.m. He seemed to enjoy his company very much, laughing and talking pleasantly. At 5 30 p.m. he had tea. At 7 p.m. he went to bed. At 8 p.m. he said to the nurse:—"I fear I have talked too much this afternoon, I have a headache again." The nurse took his temperature, and found it 100°. A dose of 30 drops of liquid extract of cascara sagrada was given, and acted well by morning, but at 9 a.m. the temperature was still as high as 99·8°. Notwithstanding, the patient dressed as usual, came down to drawingroom, and even went out for a drive in the middle of the day. He dined on filleted sole.

Towards evening he became very feverish, the thermometer rising to 102·8°; he was sponged, after which he slept well. Next morning he was dull and heavy-looking, complained of headache and pains in his arms; the temperature was 102°. I saw him with Dr. Ormsby, and considered that the attack was one of influenza—basing my opinion on

CHARTS OF TEMPERATURE RANGES IN RECURRENT ENTERIC FEVER.

Fig. 1.—First Attack, April, 1877. Patient aged 15 years.

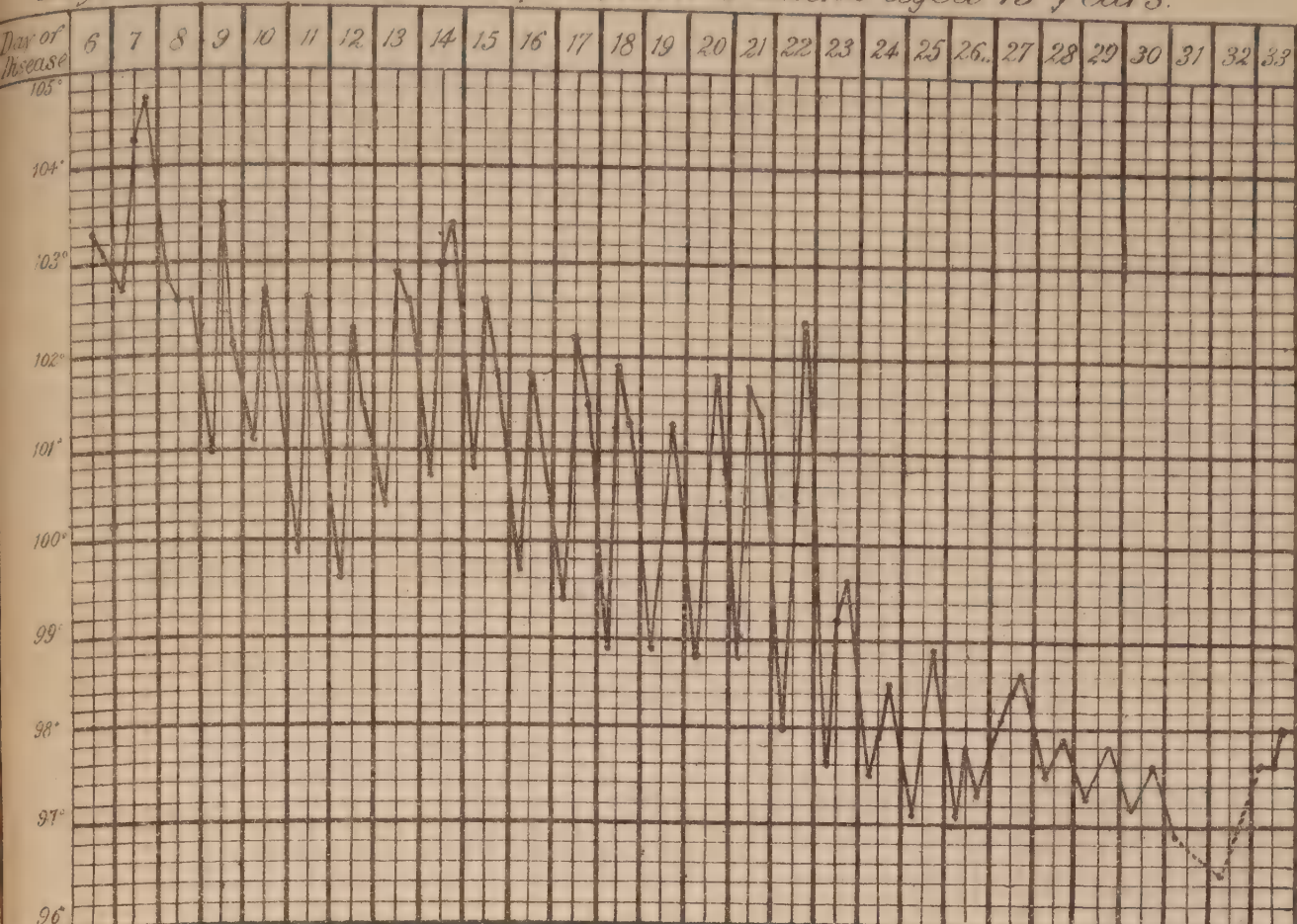


Fig. 2.—Second Attack, October, November, 1891, Patient aged 29 years.

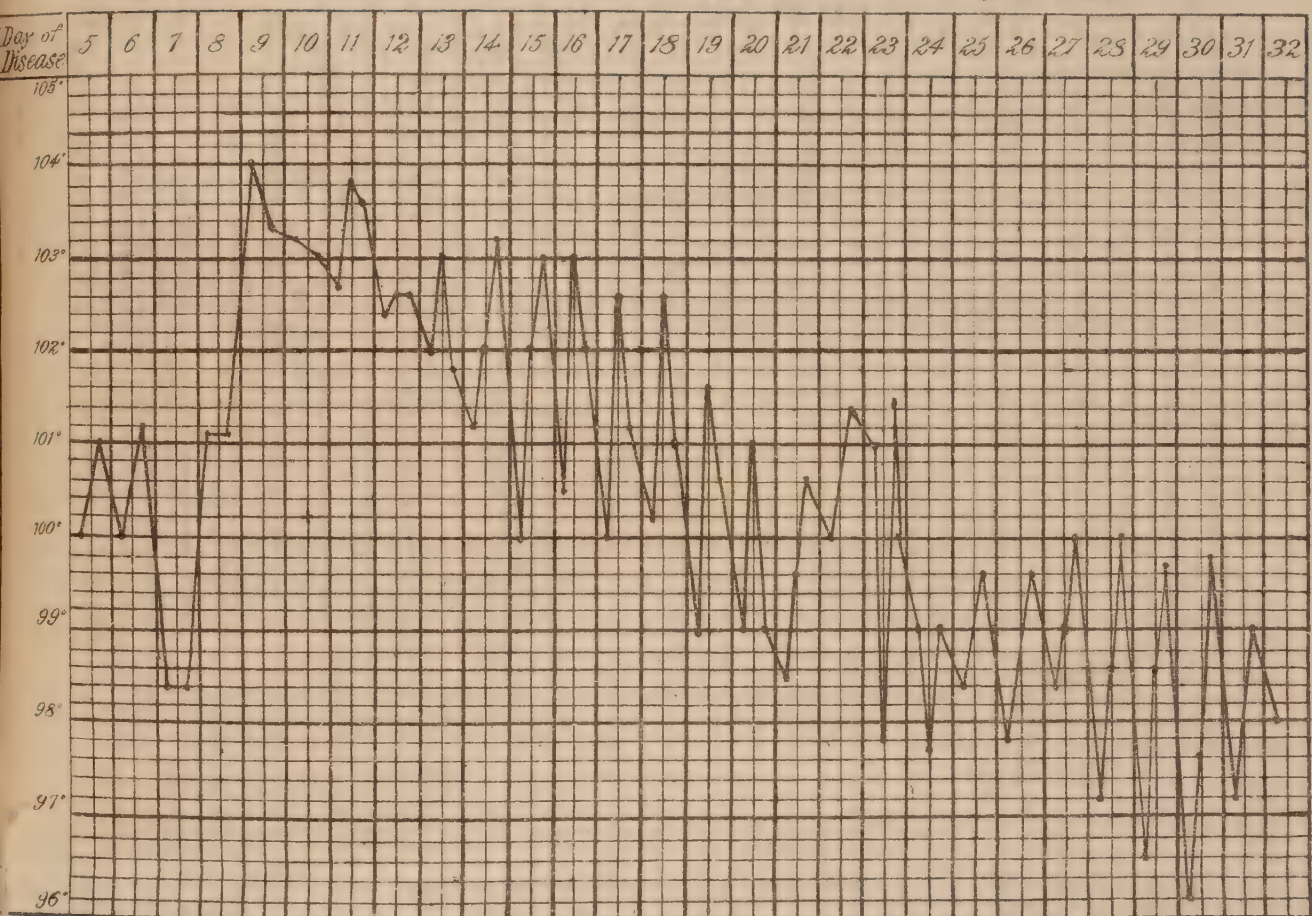
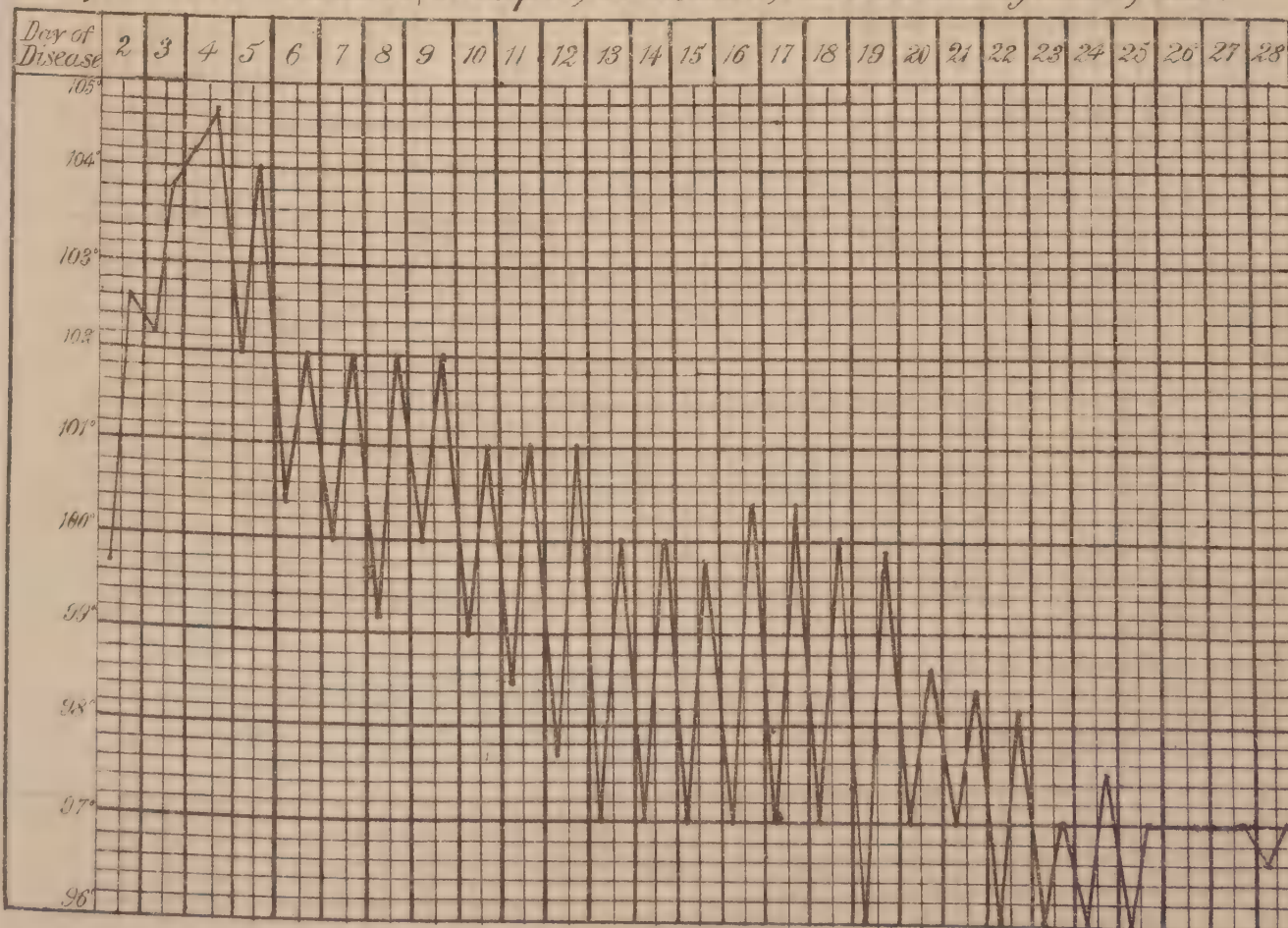


Fig. 3.—Third Attack (Relapse) December, 1891. Patient aged 29 years.



the sudden onset, the neuralgic pains, the thickly-coated tongue, and the rapid, running pulse. The temperature went on rising, however, the fever culminating on the evening of the fourth day in a reading of 104.6° . On the following day the reappearance of rose-spots in considerable number left no room for doubt as to the nature of the case, which was clearly one of relapse in enteric fever. At this time the temperature ran very high, the tongue was very dirty and coated, headache was severe, and there was much delirium at night, the patient imagining that other sick people were in the room with him, and asking the nurse if she had fed them also. There was albuminuria, and the urine was concentrated and loaded with urates.

One day the patient complained of sore throat, and we found that the tonsils were enlarged, while the uvula, soft palate, and pillars of the fauces were red and very oedematous. Much pappy exudation lay free on the surface of the mucous membrane. The throat symptoms yielded readily to frequent spraying with lactic acid, the "nebula" employed consisting of one drachm each of lactic acid and glycerine with 14 drachms of water.

The course of the relapse fever is shown in Fig. 3 in the Plate of the temperature charts. From December 12 to 16 the temperature was 102° each evening, falling to 100° in the mornings; afterwards for a week it was subnormal each morning, but rose to 100° in the evening.

December 30, 1891.—The patient is, happily, once more very well, eating solids, coming downstairs, and feeling wonderfully strong. Constipation set in with convalescence as before, but on this occasion a teaspoonful of castor oil and one of glycerine were given in milk every second morning with a good result—this simple dose keeping the patient comfortable and regular.

January 7, 1892.—The patient's temperature, which had been persistently subnormal for at least ten days, began to rise a little—from 96° to 98° in the evenings.

January 25, 1892.—On the evening of this day the patient, now quite convalescent, sailed for Holyhead *en route* to Torquay.

Remarks.—There can be no question that in a large majority of instances one attack of enteric fever confers a life-long immunity from a second. Murchison quotes Bretonneau, Gendron, Chomel, Louis, Piedvache, Sir William Jenner, William Budd, and Bartlett as holding a belief in the doctrine of acquired immunity as applied to enteric fever. At the same time well-authenticated instances of persons contracting this fever a second time are on record. Several have come under Murchison's own notice, in which both attacks occurred subsequent to puberty. Trousseau

records two examples of a second attack—one patient, a woman, suffered again after an interval of four years; the other, a girl, had a severe attack at the age of twelve, and another, equally severe, a year afterwards. Similar instances of unequivocal second attacks have been recorded by Piedvache, Michel, Bartlett, Paul, and William Budd. To this list, I submit, the case now reported may with propriety be added.

On November 5th and 6th, 1891, I had the advantage, through the kindness of Professor Emerson Reynolds, and with the aid of Mr. Emil Werner, of testing the diagnostic efficacy of Ehrlich's very striking diazo-test in a series of specimens of urine. Two of the series were non-typhoid urines, two others were from enteric fever patients, and the fifth was the urine of the gentleman whose case is the subject of the present clinical record, on the 13th day of well-marked enteric fever, he having suffered (as has been already stated) from equally well-marked enteric fever $14\frac{1}{2}$ years previously, when a lad of 15 years. In all cases a change of colour in the urine was observed on application of the test. In the non-typhoid urines only a deeper yellow was produced; in the undoubted primary typhoid urines a beautiful rose coloration quickly developed. In the case of recurrence, changes intermediate between these extremes were noticed—it was as if the previous attack exerted some controlling influence over the reaction.

Perhaps the most interesting feature in the case detailed in this communication is the *relapse* which followed hard upon the second attack of enteric fever. In my long experience of enteric fever, I can recall only three cases of true relapse. One of these I reported to the Academy of Medicine in Ireland in the year 1885.^a

Towards the close of the year 1886, I met with another instance of true relapse in enteric fever, in the person of a member of the medical profession—a gentleman aged thirty-two years. The primary attack lasted exactly 28 days, and was followed by a week of apyrexia, during which the bowels were confined. On the thirty-fifth day rigors occurred in the afternoon, and temperature rose to 104° within 30 hours. This new fever lasted 14 days, and was accompanied by a fresh but scanty crop of rose-spots from the seventh day onwards.

The third case is the subject of the present paper. In my communication to the Academy in 1885, I pointed out that among

^a Trans. of the Acad. Med. in Ireland. Vol. IV. 1886. Page 1. See also Dub. Journ. Med. Science. Vol. LXXX. December, 1885. Page 486.

the many causes of renewed pyrexia, or feverishness, in the later stages of enteric fever, or in convalescence from this disease, true relapse necessarily occupies a foremost place. And this arises, not so much from any increased danger to the patient's life—which is theoretical rather than founded on fact—as from the comparative infrequency of the occurrence of true relapse in this form of continued fever.

On that occasion I also stated that by "true relapse" I understand a second attack, in which the characteristic phenomena of enteric fever present themselves in sufficient number to establish the diagnosis of the disease—for example, enlargement of the spleen, abdominal tenderness, ochrey diarrhœa, and rose spots; or epistaxis, feverishness with evening exacerbations, abdominal tenderness and tympanites; or any other grouping of the symptoms of this fever met with in practice; the fact being admitted that a perfectly typical case of primary enteric fever, showing *all* the characters of the disease, does not often come under observation, even in the wards of a large epidemic hospital. "By a relapse of enteric fever," writes Murchison,^a "is understood a second evolution of the specific febrile process, after convalescence from the first attack is fairly established. Relapses must not be confounded with recrudescences, which are common during the stage of ulceration."

It is interesting to observe that, as usual, the relapse in the case I have detailed ran a shorter and on the whole a milder course than the primary attack. This is in accordance with clinical experience. Murchison states that the duration of the second attack is commonly, but not necessarily shorter than that of the first, while its type also is generally milder. As a result of his investigations, it would appear that a relapse is only about half as dangerous to life as a first attack.

The ætiology of relapse in enteric fever is not easily explained. In my former communication to the Academy on the subject, I have fully stated the views which are held upon this point. In the instance now before us, I cannot help thinking that the patient was poisoned afresh with the virus of enteric fever from without while he was in a particularly susceptible condition, in part owing to his weakened state, in part owing to the obstinate constipation which characterised in his case—as in so many others—the stage of convalescence.

^a The Continued Fevers of Great Britain. Third Edition. Edited by W. Cayley, M.D., F.R.C.P. London: Longmans, Green & Co. 1884. Page 552.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

A Manual of Operative Surgery. By FREDERICK TREVES, F.R.C.S.; Surgeon to, and Lecturer on Anatomy at, the London Hospital; Member of the Board of Examiners at the Royal College of Surgeons. With 422 Illustrations. Two vols. Medium 8vo. Pp. 775 and 775. London: Cassell & Co., Limited. 1891.

MR. TREVES' well-established reputation as a skilful and original surgeon led us to anticipate a work which would reach a high standard of merit, and would prove a distinct gain to the literature of English surgery. In this we have not been disappointed. In these two handsome volumes, which for clearness and excellence of typography and illustration could hardly be surpassed, and which reflect the highest credit on the publishers, we find an accurate reflex of the best that is known and thought in the operative manipulations of present-day surgery. By that we do not mean to imply that Mr. Treves' work is a compilation and nothing more. It bears on every page evidence of originality and independence of judgment. Though giving, as he states in the Preface, "the account of such particular methods as are associated with the names of individual surgeons . . . in the actual words of the authors," Mr. Treves has, in every instance, brought the various methods advocated to the touchstone of his own experience and practice, and formulated his opinions accordingly. Indeed, the generous appreciation of the work of others which is everywhere shown is one of the pleasing features of the book. Some, no doubt, may be inclined to cavil at a liberality of choice and absence of dogmatism throughout in dealing with alternative operations, and would be better pleased to have an emphatic recommendation of one particular procedure from a surgeon with such a large and varied experience, rather than have the task of selection and discrimination thrown upon themselves. But personally we think that in this course Mr. Treves has exercised sound

judgment. Anatomical advantages or disadvantages are in all cases carefully put before the surgeon, and he is left to weigh the evidence and form his own decision. No operation, as devised by its originator, can possibly be adapted without modification to every emergency, and the surgeon who has carefully studied several alternative procedures with the peculiar needs of his own case ever present in his mind, is much more likely to decide well for his patient, and to come successfully out of a difficulty, than if he were to blindly follow in all its details, suitable or otherwise, some specially designed and highly-lauded operation. We have specially drawn attention to this absence of compulsory selection, because it is frequently—and most unjustly—urged against authors by critics whose apparent line of reasoning is that without dogmatism there can be no originality, and that a book which does not bristle with the author's personality must *à priori* be a collection of platitudes and secondhand thoughts. Of Mr. Treves' originality there can, however, be no question. Those acquainted with his previous writings will be glad to find many of his well-known and frequently-expressed opinions here crystallised out into sparkling aphorisms. This is well illustrated in the first part of the work, which deals with the preparation of the patient for operation, the after-treatment, the accessories required, and the general principles of operative surgery, and is a model of what such instructions ought to be. We quote a few specimens:—"A shakiness of the hand may be some bar to the success of an operation, but he of the shaky mind is hopeless." "He who is about to undertake an operation should know precisely what he intends to do, and should then proceed to do it." "Ingenious instruments which fold up into a small compass, or which combine many functions, are usually to be avoided." Equally true is the observation that, "Some of the least progressive periods in the development of the surgeon's art have been marked by the prolific production of instruments;" and we can emphatically endorse every word Mr. Treves says as to the amount of operative surgery that can be done with a scalpel and pair of dissecting forceps for armamentarium! We quite agree with his remarks about "amputation" and "finger" knives, and his wholesale condemnation of the director, that "sturdy and dangerous bit of steel" to which "the scalpel plays a subsidiary part." What the author describes as *ligature retractors* mark a distinct gain in operative technique. In the method of dealing with the wound after operation, Mr. Treves lays especial stress on

"obliteration of the wound cavity" as a factor in securing primary union, and gives full prominence to his well-known views on the provision of free access of air to all wounds, no bed-clothes being allowed to keep the parts in a moist and germ-reeking atmosphere. Altogether we regard this first part of the book, to which we have given so much space, as one of its most important and best-written sections.

Part II. deals with the "Administration of Anæsthetics," and has been written by Dr. F. W. Hewitt. We can cordially recommend it to all those on whom devolves this duty at the bedside or in the operating theatre as presenting in a clear and concise way an account of the various anæsthetics now in use and the modes of their administration, the dangers of the anæsthetic state, and the means to be adopted in cases of accident during narcosis.

Part III. treats of the "Ligature of Arteries." The anatomical details are excellently given, and the various steps of the operations—*points de repère* of French authors—are clearly set forth; still we cannot help feeling that this is one of the most unsatisfying parts of the work. Mr. Treves discusses but briefly the question of the ligature material—a point to which we think excessive importance has been attached by a certain school of London surgeons—and gives his opinion that, "the best ligature material on the whole is chromicised catgut. It must be of reliable make, be strong, round, quite lissome, of uniform thickness, and perfectly smooth. The size must be regulated by the dimensions of the vessel to be tied."

In Part IV. "Operations upon Nerves" are described—nerve-stretching, neurotomy, neurectomy, and neuroraphy. Among the graver procedures in this branch of surgery, Carnochan's and Rose's operations come in for notice. As regards excising the superior maxillary nerve and Meckel's ganglion, Mr. Treves remarks—"Since it is to be questioned whether this neurectomy is of permanent value, the operations last described can hardly be justified by the results obtained;" while as regards Mr. Rose's operation he writes, "Sufficient time has not yet elapsed to allow of an opinion being formed as to the value of this severe operation." As Mr. Horsley's much more severe intracranial method of removing the Gasserian ganglion had not been published before the issue of this work, no reference is made to such a procedure; but most surgeons will repeat for themselves the question appended to the accounts given of these various neurectomies.

Space will not permit us to speak in detail of the entirely admirable sections which follow, and which deal with "Amputations," "Operations upon Bones and Joints," and "Tenotomy." In the first especially, and to a large extent in the second, of these parts the influence of the French school of surgery is paramount; and considering the brilliant work of the French surgeons in some of these departments which they have made specially their own, it cannot be wondered if their work is predominant throughout. Chap. 27 of Part V. gives the best account we have met with of the osteo-plastic resection of the foot, known by the names of Wladimiroff-Mickulicz; and in the same part is an excellent account of the complete removal of the upper extremity—the *amputation interscapulo-thoracique*—preference being expressed for the method of Paul Berger. In dealing with fractured patella—that much-vexed question of surgery—only two methods are described: that of Sir Joseph Lister by buried silver sutures, and that of the author by modified Malgaigne's hooks. Considering the variance of opinions and of results, some alternative methods demanded at least a brief notice.

Mr. Treves is too much under the influence of the French school to unhesitatingly condemn so-called subperiosteal resection, but he justly limits its practicability, and protests against the operator's surgical faith being oppressed by "the tyranny of a method." "It may be said, in conclusion, that the subperiosteal operation is excellent in theory, but it is only excellent in practice in selected cases. Although it is the procedure which should be adopted whenever possible, it can never become a routine method of performing excision. It is, indeed, of somewhat limited application. A partial subperiosteal resection may often be carried out in instances where the complete operation is impossible, and there must be few cases in which it is not desirable to take every precaution to preserve the connections of ligaments and the periosteal attachment of tendons." This is most excellent surgical theory, but in what proportion of cases is it possible to preserve these periosteal attachments? In how many chronic cases are tendons and periosteum culture-beds of tubercle and septic organisms? And of what benefit is it to retain a periosteum thickened and fibrous by long inflammatory process, and long destitute of any bone-forming capacity? Mr. Treves admits the undesirability in cases of new growths.

In Chap. 20, Part IV., an excellent account is given of arthrectomy—the so-called *erosion of a joint*—as applied to the knee, and

a valuable suggestion is the application of Mr. Barker's flushing gouges to this operation.

As proof of the careful way the work has been brought out we may add that in this volume the only slips which have caught our observation are—"are" for "is," p. 6; "exomphalos" for "exophthalmos," p. 230; and "*De Carte*," p. 278, as the name of the designer of the tourniquet for the compression cure of aneurysm.

The second volume opens with a section on Plastic Surgery, which is in every respect an admirable one. The general question is dealt with under three broad principles of procedure:—1. The direct union of freshened edges which are brought together, all tension upon the parts having been relieved; 2. The method of gliding or lateral displacement, embracing such operations as those of Burow, Jaesche, Brüns, and Weber; and 3. The method by flap formation, including the well-known Indian and Italian operations. Here, also, is a valuable chapter dealing with the "Relief of Cicatricial Deformities after Burns," in which the methods of Mr. Croft and the admirable results obtained by him are fully described. As, perhaps, some surgeons are as yet unacquainted with the method, it may be well to quote Mr. Treves' description of its salient features. It "consists of raising a strap or bridge of sound skin, which is left attached by its two extremities, but which is separated through the rest of its extent from the subjacent tissues by means of oiled silk." The flap so raised is allowed to granulate and "fatten," during which process it narrows very considerably, while increasing at the same time in thickness and vascularity. "After the process of granulation has been well established, the contracted structures are divided, and the bridge of skin, having been severed at one extremity, is made to occupy the gap formed by such division. The operation is indeed a flap operation, in which the attachment of the flap in its new situation is deferred until granulation has occurred." We have seen wonderful results in the closure of apparently hopeless gaps in several instances, and can cordially recommend all surgeons to try its benefits in appropriate cases. Space will not allow us to deal with the chapter devoted to Rhinoplasty, but it is full of information, and will, we believe, be found to be the most complete account of these procedures that has yet been given in any English text-book. We may point out that in the section dealing with webbed fingers the operation usually known in these countries as "Didot's" is here described as "Diday's," that surgeon being

accorded the priority of description. As the operation is also known as "Nélaton's," we have here a puzzling richness of nomenclature.

Part IX. deals with operations on the neck, and an excellent chapter on Tracheotomy is included. Full accounts are given of Bose's operation, so largely practised in Germany, and of Mr. Whitehead's modification of it, but we must give the preference to the original procedure as more surgical and less likely to inflict damage than the injudicious use of a "raspatory" among the delicate peritracheal tissues. One sentence might be fitly engraved on the mind of every surgeon:—"Tracheotomy affords a striking illustration of the adage 'the more haste the less speed.' The surgeon who proceeds to open the trachea in a precise and deliberate way will have completed the operation before the frantic man, who, with a palpitating heart and a trembling hand, cuts wildly towards the spine, and who appears to be actuated by the unsteady conviction that he must gash something or the child will perish." This picture is no exaggeration of scenes of which, we regret to say, we have been eye-witnesses.

In treating of thyroidectomy, complete or partial, it is surprising to find no reference made to the operation of division of the isthmus of the thyroid body alone—a procedure which in the hands of some surgeons has yielded most excellent results and is certainly deserving of notice in a manual of operative surgery. This is an omission which it is to be hoped will be rectified in future editions.

The various operations for the removal of the tongue—Whitehead's, Kocher's, &c.—are fully detailed, and it is interesting to note, in connection with the discussion which took place at the beginning of this session in the Surgical Section of the Royal Academy of Medicine in Ireland, Mr. Treves' deliberately expressed opinion: "I believe that the removal of the tongue with scissors after the linguals have been ligatured in the neck provides the best method of excising the organ" (p. 189); and on p. 202 the advantages gained by this method are admirably discussed in detail in a reply to Mr. Jacobson's objections to its performance.

Knowing how specially Mr. Treves' work has been associated with abdominal surgery, one naturally turns with intensified interest to that section in which his latest conclusions are embodied. And how fully these are set forth may be gathered from the fact that Part X., dealing with "Operations upon the Abdomen," occupies 294 pages of the second volume. Only one or two debated points can be touched upon here. In

supra-vaginal hysterectomy for myoma Mr. Treves unhesitatingly declares in favour of the intra-peritoneal method of treating the pedicle:—"In comparing these two procedures it may at once be said that the intra-abdominal method is the better, is the more perfect, and is the one more completely in accord with the soundest principles of operative surgery." And to this opinion we hope all philosophical surgeons will soon subscribe. An excellent and clear account of Senn's method of intestinal anastomosis, and of Sach's modification of it, will also be found in this section, though apparently the author regards the method as of very limited application. As regards the relative value of lumbar and iliac colotomy Mr. Treves is disposed to agree with the conclusions put forward by Mr. Bryant in his Bradshawe lecture—an opinion, we are glad to think, daily upheld by fewer surgeons. Chapter 15 contains a very complete account of "Operations on the Liver," but a few years ago a blank page in surgical literature.

In the portion of Part XV. that treats of cerebral surgery we are glad to find references given to Dr. Birmingham's admirable studies on the relative positions of the mastoid antrum, lateral sinus, &c., as we believe these are the best and most accurate guides that have yet been laid down in dealing with conditions in this region requiring operation.

Part XVI., "Operations on the Thorax and Breast," contains a good, if somewhat brief, account of the principal surgical procedures in this field, and brings the work to a conclusion. Estlander's operation, and the subject of "Incision and Drainage of Lung Cavities," are here discussed, and the conclusions arrived at are mainly based on Mr. Godlee's admirable lectures on these operations.

We have now brought to a close our survey of these volumes, and we can heartily congratulate Mr. Treves on the use to which he has put the "leisure" obtained "during the last four years." We have carefully read the work, and have no hesitation whatever in recommending it as the best manual of operative surgery in the language. It is the work of a practical and progressive, as well as philosophical and conservative, surgeon, and for soundness of teaching and lucidity of phrase and expression is, in our opinion, without a rival. It will deservedly add to the high reputation which Mr. Treves has already earned by solid and earnest work in many fields of surgery.

The Treatment of Typhoid Fever, and Reports of Fifty-five consecutive Cases with only one Death. By JAMES BARR, M.D., Physician to the Northern Hospital, Liverpool; Medical Officer of her Majesty's Prison, Kirkdale, &c. With Introduction by W. T. GAIRDNER, M.D. London: H. K. Lewis. 1892. Pp. 212.

THE important feature of this book is the account of Dr. Barr's treatment of serious cases of typhoid by means of a continuous bath in which the patient is immersed for days. It, however, contains, as well, Dr. Barr's views as to diet, drugs, and general management.

After the introduction there is a historical sketch of the treatment of the continued fevers from the time of Sydenham; most prominence is naturally given to the various antipyretic methods. Dr. Currie, who used cold affusion very largely, and laid down very careful rules for its adoption in suitable cases, is largely quoted. Dr. Barr shows that the treatment by cold water is by no means new. Dr. Robert Jackson used it as early as 1774, his practice having been to give the patient a warm bath, and after that to pour cold water over him. Currie adopted the treatment by affusion of cold water in 1787; and although, as Dr. Barr shows, it has been employed with good results by various physicians from time to time ever since, it has been recklessly and foolishly used by others, and has never met with general adoption.

Dr. Barr describes his own method of management at considerable length. He begins the treatment with a purge of 2 grains of calomel, and when there is constipation during the course of the illness, he repeats the same remedy in about half-grain doses, occasionally also using enemata. He strongly advocates the routine administration of intestinal antiseptics; having tried many drugs, he now prefers salol, giving to an adult 10 grains every four hours, and if much diarrhoea is present, adding 10 grains of bismuth salicylate to each. If there is, on the other hand, constipation, one-twelfth of a grain of calomel may be added to each dose of salol. In none of the new antipyretic drugs has Dr. Barr any faith as far as their use in typhoid is concerned.

Dr. Barr's views with regard to the diet of typhoid patients differ considerably from those held by most physicians. "During the febrile stage the food, whatever it be, should be liquid, and should be administered every two or three hours. I place no limit on the quantity of liquid nourishment, so long as it is retained

in the stomach and properly digested; but for an adult I usually find that about four pints of milk, eight to sixteen ounces of bread, and two ounces of butter, are appropriated daily, and there is no use in giving any diet which is not assimilated. The bread should be boiled with the milk, or it may be peptonised, and the butter added. In the tank the appetite soon becomes very good, and these quantities do not suffice."

The section on antipyretic treatment is chiefly devoted to a description of the author's tank and its results. The apparatus is fully described; for all details we must refer our readers to the original. As far as we can gather from the description, Dr. Barr would put all severe cases into this continuous bath. The water is kept at a temperature of between 90° and 98° F. The patient is moved as little as possible, and is enjoined to pass his urine and fæces into the water, but as his buttocks rest just over the large discharge pipe of the tank, the water can be kept fairly clean. Some cases, however, were raised out of the water to have their bowels moved. The patients remained a variable time in the tank—some only a few days, others as long as thirty-one days. Under the influence of the tank-treatment Dr. Barr says the temperature is lowered, vaso-motor tone is improved, bronchitis and congestion of the lungs lessen and soon disappear, the tongue becomes moist and clean, appetite and digestion improve, and the diarrhœa lessens, delirium disappears, and the general well-being of the patient greatly improves.

The rest of the book—rather more than half of it—is occupied with detailed notes of 55 cases of typhoid treated by Dr. Barr in accordance with the principles laid down in this work. Of these 55 cases only one died—a remarkable record.

This is one of the most original works on typhoid fever that we have read. Dr. Barr is no mere follower of others; he has struck out a line for himself, and his results have amply justified his boldness. Few physicians will read this book without being the wiser for having done so. Even though we may not approve of all Dr. Barr's methods of treatment, and though we might shrink in practice from following his directions, nevertheless it is always well to know what able and learned men are doing, and to consider whether the treatment which we are ourselves satisfied with is after all the best one we can possibly adopt.

We can warmly recommend Dr. Barr's work to the careful consideration of our readers.

Report of the Hyderabad Chloroform Commission. With a Preface by SIR ASMAN JAH, K.C.I.E., Prime Minister of Hyderabad. Bombay: Printed at the *Times of India* Steam Press. 1891.

THE first feeling of every medical reader of this quarto of 400 pages cannot be other than that of gratitude to his Highness the Nizam of Hyderabad for his munificent generosity in defraying the expenses of the Hyderabad Chloroform Commissions. Afterwards the thoughts will naturally arise, to wit:—Is the evidence conclusive in favour of chloroform, or are the physiological experiments on the lower animals and the numerous and accurately noted clinical cases open to any other conclusion than that arrived at by the Commission? And are native Indians protected by racial characteristics or climatic conditions from the pernicious effects of chloroform?

Acting on the doctrine of probabilities there are no good grounds for thinking otherwise than favourably of chloroform after its successful issue from all the tests applied. No anæsthetic has been submitted to so many and such various tests as chloroform. The second Hyderabad Commission has performed its work with a fulness and completeness hitherto unknown; and the fact that the decision of the Commission coincides with that of the great majority of the medical profession, both at home and abroad, is eminently satisfactory, and well calculated to allay the public anxiety as to the value of the drug which enthusiastic etherists created.

One good has resulted from the labours of the Commission that must advantage the public—to wit, the teaching to students and practitioners the nature and mode of administration of the more used anæsthetics. That chloroform cannot, no more than any other powerful therapeutic remedy, be administered by the ignorant or careless has been emphasised in too marked a manner to allow of the lesson being neglected.

The Report of the Commission was held back, as stated by Sir Asman Jah, in compliance with the wish of Surgeon-Major Lawrie, “that the experimental data of the Commission should be subjected to the test of prolonged clinical experience;” and with a liberality of thought Sir Asman wishes that it may be submitted to “that free criticism and discussion that are essential to the final acceptance of the principles confirmed or brought forward by the Commission.”

Surgeon-Major Lawrie, in his statement of the “origin of the Commission,” makes the important and honourable announcement

that the "Commission was greatly encouraged in this work by the personal interest shown in it by his Highness the Nizam, who, accompanied by his staff, visited the laboratory on two special and memorable occasions." And further adds:—

"Two commissions to examine into the alleged dangers of chloroform have been appointed by his Highness the Nizam's Government. The first Commission, which was appointed in 1888, consisted of Surgeon Hehir, I.M.D., President, and two members, Messrs. J. A. Kelly, L.R.C.S. & P. (Ed.), and A. Chamarette, L.M.S. This Commission was applied for by Surgeon-Major Lawrie, Residency Surgeon, Hyderabad, because, having always believed in the truth of Symes' teaching that chloroform can be used judiciously so as to do good without the risk of evil, he desired to show by experiments upon dogs that in death from chloroform the respiration always stops before the heart. This point having been proved, the second Commission was applied for, because it was felt that Symes' principles, which both experience and experiment had shown to be practically sound, must be founded on a firm physiological basis."

Such was the genesis of these Commissions which have done so much to restore chloroform to professional and public favour.

The experiments of the Commission were conducted on the following lines:—

"1. The attention of the Commission should be specially devoted to the effects of chloroform on the circulation and respiration.

"2. The chloroform should be administered generally in the same way as it is ordinarily given to patients in the Azful Gunj and Residency Hospitals.

"3. The dose and rapidity of administration should be varied in every possible way, and the admixture of air with the chloroform should also be varied.

"4. At least 100 full-grown dogs should be killed with chloroform, and the points to be specially noted should be—

"(a) The time taken to bring the dog fully under the influence of the anæsthetic.

"(b) The interval between this and the stoppage of respiration and cessation of the pulse and heart's action.

"(c) Whether the heart is directly affected by chloroform, and whether it ever ceases to beat either in slow or rapid poisoning before the respiration stops.

"(d) The effects of artificial respiration commenced directly the respiration stops, and at varying intervals afterwards.

"5. The details of procedure will be left to the Commission, and you

are requested to submit a report of the work of the Commission at any time convenient to yourself before the termination of the official year."

Admirable as this scheme is—and for testing the lethal properties of the anæsthetic it would be difficult to formulate a better one—the omission of the use of oxygen gas and the inversion of the animal as restorative methods in cases of suspended respiration are greatly to be regretted. Indeed, when carrying out such exhaustive physiological experiments, the testing of the better known restoratives, such as strychnin, amyl nitrite, and atropin hypodermics might have been undertaken by the Commission.

The first Commission concluded that "chloroform may be given to dogs by inhalation with perfect safety, and without any fear of accidental death, if only the respiration, and nothing but the respiration, is carefully attended to throughout, and the second Commission confirms the opinion.

It is to be hoped that, if these physiological experiments are repeated, the value of oxygen as an antidote to anæsthetic narcosis will be tested. The testimony in its favour as an antidote to anæsthetic necrosis comes from such well-known writers as Jackson, Blanchet, Duroy, Faure, Gianetti, Ozanam, Perrin, Ludger-Lallemand, P. Bert, and others.

As an antidote to carbonic oxide and carbonic dioxide there is the testimony of Faure, Gianetti, Linas, Créquy, C. Paul, Coignard, Hayem, and others.

Davy, whilst testing carbo-hydrogen gas, found out its value, and since that Sierking, Esdaile, and others, have confirmed Davy's statement.

Sewage gas has also its poisonous effects counteracted by oxygen, as shown by the cases reported by Créquy, Limousin, Faure, and Ozanam.

It may, however, be answered that the Hyderabad Commission had but one duty to perform—to wit, to learn how chloroform killed. True, but the scientists went a little further. They resuscitated some of the asphyxiated animals, and noted the effects of artificial respiration. Perhaps, however, it is better that the oxygen-chloroform experiments should, as Jackson did with the oxygen-ether, be made the work of a special occasion.

On the third page of the Report we are reminded that the volume before us is a history of the origin and incidents of the Commission as well as a scientific record of the work and the deductions from it; and we have copies of "leaders" of medical

journals and of their correspondence on the chloroform controversy, matter which might well have been delegated to the appendix.

Those who take a keen interest in the anæsthetic controversy read all sides of the question, and are quite familiar with the names of the principal combatants, and know even the less distinguished writers on the subject. Historically the record may be useful, but the historical value of the leaders and letters would in no way be diminished by a place in the appendix.

Paragraph 11, page 9, is occupied with a statement of American opinion on the relative value of chloroform and ether, and, like many others, Dr. Lawrie confounds the New England States with the United States. In so doing he reminds us of those politicians who in describing Ireland leave out Ulster. The New England States are not the United States, neither is their opinion the American opinion. The men who raised American surgery to its present high standard were Southerners, men of the Cotton States; and when the State-right War occurred the Confederate surgeons exhibited a skill and resourcefulness, and produced better results, than up to that time any military surgeons ever recorded, and all this was done amidst the greatest difficulties. The men who have this splendid record to their credit without exception are chloroformists. Two of the most distinguished of these Southern surgeons have expressed their views on the chloroform questions in no uncertain manner, as may be seen by reference to Mr. Foy's book, "Anæsthetics: Ancient and Modern." That the Eastern States advocate ether in season and out of season, and that they are intolerant of any difference of opinion, is notorious, but, nevertheless, the United States refuse to be dominated by a noisy, didactic faction, and with the majority of American surgeons chloroform continues to be the favourite anæsthetic. It is just possible that Professor Woods' pronouncement in favour of ether was inserted by Dr. Lawrie to give his readers the benefit of reading the strong and, we think, erroneous statement that "hundreds of utterly unnecessary deaths have been produced by the extraordinary persistence in its use by a portion of the profession."

The great value of the Commission depends not alone on the many and varied experiments performed, but on the fact that they tried "as far as possible to give the experimental data from which their conclusions are derived, thus enabling all future investigators to utilise their data, and allowing of a criticism both as to the experiments performed and the conclusions deducted from them."

The Commission divided into two committees—one, the committee, was composed of Drs. Lauder Brunton, Bomford, Hehir, and Chamarette; the other, the sub-committee, was composed of Dr. Rustomji, Mr. Kelly, and Dr. Gay.

The committee first of all performed 27 experiments to test the work of the first Commission. The sub-committee worked in the same room under the supervision of the committee.

The experiments of the sub-committee, together with the first 28 performed by the committee, form a total of 430. In these experiments 268 dogs and 31 monkeys were killed outright, and 86 dogs and 39 monkeys were subjected to artificial respiration at varying intervals after the natural respiration had been arrested with chloroform.

The animals which were killed had chloroform administered to them in every possible way and under every conceivable condition. A large number of dogs were killed just as they were caught in the bazaars; others at various intervals after having heavy meals of meat or farinaceous food or fat; others fasting; others after the administration of Liebig's extract of meat, coffee, rectified spirits of wine, or ammonia. Most of these animals were healthy, but some of them had cardiac disease, and in many the heart and other organs were rendered fatty by the previous administration of phosphorus.

In a large number of cases morphin, strychnin, and atropin, singly and in combination, were given by subcutaneous injection at intervals before the inhalation was begun. Chloroform was given with and without inhalers in the vertical and recumbent positions; in glass and wooden boxes; in large and small doses; by being pumped into the trachea with bellows; and, in fact, in every way that could suggest itself to the Commission.

The results in one respect are uniform:—

“In every case where chloroform was pushed the respiration stopped before the heart. The movements of the heart were in the first 66 cases of the sub-committee tested by auscultation, but afterwards by a needle inserted through the chest wall into the organ, and the thoracic cavity was laid open when doubt existed.”

In the majority of uncomplicated cases, which include those fed in different ways before inhalation, the heart ceased to act in from two to six minutes after stoppage of the respiration. In one uncomplicated case the heart's action ceased within one minute

after the breathing stopped. The heart ceased within one minute after the respiration stopped in two cases where the inhalation was very slow and prolonged, in four cases complicated by asphyxia, and in one where the subcutaneous injection of morphin (gr. $\frac{1}{2}$) and strychnin (gr. $\frac{3}{100}$) was administered beforehand. The maximal time the heart continued to beat after the respiration ceased, in the experiments of the sub-committee, was eleven minutes in a dog and twelve in a monkey.

The effects of chloroform do not appear to be interfered with or much influenced by any of the variations in the method of preparation of the animal for, or of the administration of, the anæsthetic. There are four general exceptions to this statement—

(1) In very slow administration.

(2) In prolonged administration.

(3) In cases complicated with partial asphyxia.

(4) In one case where one-third of a grain of atropin was administered before the inhalation.

In these cases the heart stopped very soon after respiration ceased; and in all cases where the inhalation was accompanied by struggling, the animals became insensible with unusual rapidity. In these cases, also, the interval between the cessation of respiration and the time of possible restoration by artificial respiration was shortened.

As regards the restorative effects of artificial respiration, the sub-committee found it nearly always successful if commenced within 30 seconds after the respiration ceased; very seldom successful if commenced between 30 and 60 seconds after; and always unsuccessful if not begun till after 60 seconds. In 44 cases in which artificial respiration proved successful it was commenced on an average 28·2 seconds after natural respiration ceased; in 38 unsuccessful cases the average was 31·5 seconds.

The sub-committee formed the opinion that artificial respiration was less successful in restoring the respiration after it had been stopped by chloroform in cases where a subcutaneous injection of morphin was administered before the inhalation was commenced. There were 18 cases in which this was tried. In the first 6, artificial respiration was commenced 8 seconds after cessation of natural respiration; of these, 5 died. In 3 cases artificial respiration was begun 15 seconds after the natural respiration ceased; and of these, 2 recovered, and 1 died. In 3 cases in which artificial respiration was commenced 20 seconds after the respiration stopped,

2 out of the 3 died. And lastly, in 6 cases where artificial respiration was not commenced till 30 seconds afterwards, 5 died, and 1 was revived. The average of those cases that were revived was 17·6 seconds, and of those that died in this series, 26·4 seconds.

To the practical surgeon the above experiments are, perhaps, the most valuable of the series. With such results before him the operator must recognise the supreme importance of attention to the respiratory function, and the necessity to its restoration to the normal on the slightest evidence of its failing. It may be also said to stop the use of morphin and atropin hypodermic injections, for even those who up to this have preceded chloroformisation by hypodermics of morphia will be unwilling to incur the risk of censure from the public should any chloroform fatality occur.

The stress laid on the risks associated with the struggling of the animal whilst being anæsthetised cannot but be approved. Struggling during anæsthetisation can, as a rule, be avoided by not forcing the anæsthetic at the beginning of the anæsthetisation, and if it occurs during the process later on the anæsthetic should be withheld until the struggling ceases. Some patients after a few violent struggles suddenly become completely under the influence of the anæsthetic, and, as the Commission's labours show, such persons are in imminent danger, their respiratory function being with more difficulty restored than in those whose anæsthetisation was unattended by struggling.

Experiments with recording apparatus are dealt with in Part III.

All the manometer tracings were photographed, and these photographs remain for all future inquirers who are so inclined to test the accuracy and value of the experiments and the correctness of the deductions that the Commission arrived at.

The explanatory notes were written partly at the time of, and partly after, each experiment, thus avoiding errors that might arise from forgetfulness or the loss of memoranda, and giving a much more interesting statement than could be produced otherwise.

For these experiments dogs, monkeys, horses, goats, cats, and rabbits, were pressed into service, and not alone chloroform but ether and the A.C.E. mixture were used.

On page 16 the objects of the Commission are thus stated:—

1. To test the suitability and safety of chloroform as an anæsthetic. The experiments with ether and the A.C.E. mixture were

instituted principally for the sake of comparison with chloroform on certain points, and it is not pretended that they afford a complete exposition of the action of these agents on the system.

2. The effect of pushing the above-named anæsthetics (*a*) to a dangerous degree, and more especially until the respiration ceases, (*b*) until death results.

3. The modification in the effect of these anæsthetics which result from—(*a*) asphyxia in varying degrees and produced by various means, (*b*) from the use of drugs such as morphin, atropin, physostigmin, and others.

4. The reality or otherwise of the alleged liability during ordinary chloroform administration to the occurrence of primary or secondary syncope or stoppage of the heart, brought about either by shock, or through fatty or weak heart, or by hæmorrhage, or by changes in the position of the body. To investigate these points, in the first place, a large number of operations which are reported to be especially dangerous in reference to shock were performed in every stage of anæsthesia, and numerous experiments were also made to show the effect of direct irritation of the vagus; secondly, a number of animals were dosed with phosphorus before they were experimented on. This caused weakness of the heart by fatty degeneration of its fibres, but, at the same time, other complicated changes in the whole of the organs of the body not met with in the condition known as fatty heart in human beings. On the other hand, there are conditions often met with in the fatty heart, such as changes in the coronary vessels, which were not produced by the phosphorus.

5. The effect of the anæsthetics above mentioned upon different animals, more especially upon monkeys, as the nearest approach to human beings.

The conclusions arrived at by the Commission are the following, which, for those who may not have an opportunity of seeing the Report and because of their extreme importance, are here given in full:—

“1. Chloroform, when given continuously by any means which ensures its free dilution with air, causes a *gradual* fall in the mean blood-pressure, provided the animal's respiration is not impeded in any way, and it continues to breathe quietly without struggling or involuntary holding of the breath, as almost always happens when the chloroform is sufficiently diluted. As this fall continues the animal becomes insensible, then the respiration gradually ceases, and, lastly, the heart stops beating. If the

chloroform is less diluted, the fall is more rapid, but is always gradual as long as the other conditions are maintained; and however concentrated the chloroform may be, it never causes sudden death from stoppage of the heart. The greater the degree of dilution the less rapid is the fall, until a degree of dilution is reached which no longer appreciably lowers the blood-pressure or produces anæsthesia.

“2. If the inhalation is interrupted at any stage, the fall of pressure still continues at a rate which depends altogether on the rapidity of the fall while the chloroform was being inhaled. This after-fall is probably due to absorption of a portion of the residue of chloroform in the air-passages after the stoppage of the inhalation. In this way it often happens, if the chloroform is given rather freely, that though the respiration may be going on when the chloroform is discontinued it afterwards stops.

“3. If the administration of the chloroform is stopped at an early stage the pressure very soon begins to rise again, and gradually becomes normal; but if the chloroform is pushed further, there comes a time, not easy to define, when the blood-pressure and respiration will no longer be restored spontaneously, although the heart continues to beat after the inhalation is stopped.

“4. If the fall has been very gradual, it may occasionally happen that the respiration stops completely, and still the blood-pressure rises again, the respiration recommencing spontaneously in the course of the rise. In the same way, when the inhalation has been discontinued, the respiration may stop during the after-fall of the blood-pressure and begin again spontaneously. As a rule, if the respiration has stopped, or even become slow and feeble, at the time when the inhalation is discontinued and artificial respiration is not resorted to, the fall in blood-pressure will continue until death ensues.

“5. There are two conditions which frequently disturb the fall of the blood-pressure—viz., struggling and holding the breath, and it is only by great care that they can be avoided in animals.

“6. Struggling, independently of any change in the respiratory rhythm, appears generally to increase the blood-pressure. In one case of a dog much weakened by phosphorus the pressure fell every time he struggled.

“7. When struggling is accompanied, as it often is, by acceleration of the respiration and pulse, especially if the respiration is deep and gasping, it leads to a more rapid inhalation of chloroform, and consequently to a more rapid fall of blood-pressure and a greater after-fall. In order to keep the chloroform cap or inhaler in its place during the animal's struggles the administrator is obliged to hold it down more tightly over the nose and mouth, and this materially assists in hastening the rapidity of the inhalation, and consequently the fall in blood-pressure.

“8. The effect of involuntarily holding the breath, which, as anybody can prove by experiment on himself, must happen when an inhaler saturated with chloroform is first applied to the face, is much more remarkable, the pressure often falling with great suddenness, while the heart's action is markedly slowed. As soon as the animal draws breath again the pressure rises as suddenly as it fell, but the gasping respiration which succeeds then causes very rapid inhalation of chloroform with immediate insensibility and a rapid fall of blood-pressure, which quickly becomes dangerous.

“9. The combination of struggling with alternate holding the breath and gasping, which results if chloroform is applied closely to the face without sufficient dilution with air, causes violent fluctuations, and then a speedy fall of the blood-pressure, which very soon leads to a dangerous depression with deep insensibility and early stoppage of the respiration. The after-fall under these circumstances is rapid and prolonged. It is this combination of events which causes struggling animals to go under chloroform so quickly.

“10. The effect of holding the breath may occasionally cause a temporary fall of blood-pressure after the chloroform inhalation has been stopped, or even when the animal is quite out of chloroform. The fall is recovered from directly the animal breathes again.

“11. Slight continuous asphyxia, such as is produced by pressure on the neck by straps, a badly-fitting muzzle, or hindrance of the chest movements by the legs being too tightly bound down, gives rise to exaggerated and irregular oscillations of the blood-pressure, and slowing and irregularity of the heart's action. If it leads to, or is accompanied by, deep gasping inspiration, it is apt, like anything else which causes this, to increase the intake of chloroform and bring about a rapid decline of blood-pressure.

“12. Complete, or almost complete asphyxia, as by forcibly closing the nose and mouth or closing the tracheal tube after tracheotomy, has an effect similar to, but more marked than, that produced by holding the breath, and the character of the trace corresponds precisely to that produced by irritation of the peripheral end of the cut vagus. The pressure falls extremely rapidly, sometimes almost to zero, and the heart's action becomes excessively slow or even stops for a few seconds. If the Fick trace of experiment No. 148 be compared with the photographic reproduction of trace A of the Glasgow Committee, it will be seen that they are identical, and that the slow action of the heart with great fall of pressure, which the Glasgow Committee attributed to some capricious action of chloroform upon the heart, was undoubtedly due to asphyxia.

“13. The effect of asphyxia is the result of stimulation of the vagi. The proof of this is—(a) that the trace corresponds exactly, as stated above, to that produced by direct irritation of the vagus; (b) division of

both vagi entirely abolishes it; and (c) the administration of atropin, which paralyses the vagus, also abolishes it.

“14. In trace 158 (Fick 4), which was taken during asphyxia after a full dose of atropin, it will be seen that there is an alternately slow and rapid pulse according to the phase of the respiratory movement, but no continuous slowing of the heart as in vagus irritation. But there was still a distinct fall of pressure after the atropin when the breath was held, and it was thought that the slowing of the pulse above noted in this condition might be due to the disturbance of the heart from tension in the pulmonary vessels in the absence of respiratory movement, rather than to irritation of the vagi. To test this point, Experiment No. 184 was instituted. In this experiment the dog's chest was forcibly inflated with bellows connected by a tube with the trachea, and the effect of this proceeding was to cause a fall of pressure and slowing of the heart exactly the same as an involuntary holding of the breath. The dog was then poisoned with atropine, after which inflation of the chest still caused a fall of pressure, but without slowing of the heart. The fall of pressure must be in some degree independent of vagus irritation, which however usually accompanies it.

“15. It only remains to be considered whether the slow action or temporary stoppage of the heart, with great fall of pressure, produced by vagus irritation, is in itself an element of danger in chloroform administration, and if it is not, wherein the danger actually lies.

“16. The experiments in which deliberate irritation of the vagi was carried on during anæsthesia show unmistakably that irritation of these nerves diminishes rather than enhances the danger of anæsthetics. The effect on the heart is never continuous, and as the vagus becomes exhausted, or when the irritation is taken off, the blood-pressure rises again, as it does when the same result is produced by asphyxia. The slowing of the heart and circulation, which is produced by irritation of the vagus by any cause, such as holding the breath in chloroform administration, retards the absorption and conveyance of chloroform to the nerve centres, just as holding the breath, whether voluntary or involuntary, prevents chloroform from entering the lungs; and, of itself, slowing or temporary stoppage of the heart in chloroform administration, is not dangerous.

“17. To answer the second part of the last question in paragraph 15 is easy enough, if it is kept in mind that the effect of vagus irritation upon the heart is never continuous; and in chloroform administration, as the pressure rises again after the slowing of the heart and temporary fall of pressure produced by any form of asphyxia, violent respiratory efforts with bounding heart's action lead, as in the case of struggling, to a rapid and dangerous inhalation of chloroform, and consequent rapid and dangerous decline in blood-pressure. It is, in fact, the temporary

exhaustion of the vagi after stimulation that is to be feared, and not the actual stimulation as long as it is continued.

“18. In accordance with this fact, it will be found that in chloroform administration neither holding the breath, even if involuntary, nor vagus inhibition, can be kept up beyond a certain time; and if the chloroform is not removed from the face, one or both of two things may happen—(1) when the animal breathes against it, takes deep and gasping inspirations, the lungs become filled with chloroform, and an overdose is taken with extreme rapidity; or (2) when the restraining influence of the vagus is taken off the heart, through the irritation ceasing or the nerve becoming exhausted, the heart bounds on again, and the circulation is accelerated in proportion. The blood then becomes quickly saturated with chloroform, and an overdose is at once conveyed to the nerve centres. The theory which has hitherto been accepted is, that the danger in chloroform administration consists in the slowing or stoppage of the heart by vagus inhibition. This is now shown to be absolutely incorrect. There is no doubt whatever that the controlling influence of the vagus on the heart is a safeguard, and that it is the exhaustion of the nerve which is dangerous.

“19. It can be readily understood how a condition in which the pulse is rapid and bounding with high blood-pressure leads to more rapid absorption of chloroform from the lungs, and a more rapid propulsion of the chloroformed blood to the medulla oblongata, and consequently to a more rapid paralysis of the respiratory and vaso-motor centres and precipitous fall in the blood-pressure. Such a condition is produced in some cases by ether, or by division of both vagi, or by a full dose of atropine. Not only is the poisoned blood carried more swiftly to the vital centres in these cases, but added to this there is the fact that, as the heart is already doing its utmost before chloroform is given, it is unable to stave off by increased work the fall in pressure that occurs when the vaso-motor centre is paralysed. On the other hand, it seems clear from Experiment 92 that the direct action of chloroform upon the heart is not the cause of the fall of pressure that occurs when it is inhaled.

“20. In Experiment No. 92, repeated injections of 20 m. of chloroform were made into the jugular vein, and its effect was not to paralyse the heart, but to produce anæsthesia and a gradual fall of blood-pressure, exactly as if the chloroform had been inhaled. In Experiment No. 72, after a considerable amount of ether had been injected into the jugular vein, and bounding condition of pulse had been produced, the effect of injecting chloroform into the jugulars was much greater, and the fall of blood-pressure much more rapid and dangerous than in the case when chloroform alone was injected. Granting, then, the truth of Ringer's conclusions from experiments on the frog's heart (which have not been

repeated and confirmed by the Commission) that chloroform has a gradual paralysing effect upon the heart's tissue, we must conclude that such an effect, in the degree in which alone it could occur in the practical inhalation of chloroform, would rather be a source of safety than of danger.

"21. The Committee discussed the advisability of cutting the vagi some time previous to experimenting on the blood-pressure with chloroform. The effect of this procedure is to cause continuous rapid action and tendency to exhaustion of the heart, as well as to degeneration of the terminal branches of the nerves in the heart if the animal live sufficiently long. Such experiments might be of some interest theoretically, and also have had a practical bearing on the condition of the heart in certain cases of chronic alcoholism; but the Committee decided not to perform them, as it considered the end to be gained did not justify the pain they would have inflicted.

"22. In Experiment No. 178, the case of a dog that had had morphine, remarkable slowing and even temporary cessation of the heart's action occurred again and again at the same moment as the respiration stopped, but the heart invariably recovered itself and began again to beat regularly before any steps were taken to restore the animal, and without any respiration occurring. We find in this case that it was possible to restore the animal, even after unusually long intervals had been allowed to elapse between the cessation of the natural and the commencement of artificial respiration. The failure of the heart, if such it can be called, instead of being a danger to the animal, proved to be a positive safeguard by preventing the absorption of the residual chloroform and its distribution through the system.

"23. The effect of artificial respiration after the natural respiration has ceased is to cause an alternate rise and fall of small amount in the blood-pressure, the trace thus formed on the drum being a coarse imitation, altered somewhat by the shaking of the table, of the natural respiratory curve. The difference consists chiefly in the fact that the artificial rise and fall is more abrupt than in the natural breathing, and that the rise always coincides with expiration or compression of the chest. After artificial respiration has been continued for a certain time the blood-pressure begins to rise again, and a little later natural respiration returns.

"24. The effect of artificial respiration in restoring an animal after the respiration had stopped was always marked. In a few exceptional cases, such as No. 159, a phosphorus dog, and No. 142, a horse which had an enormous overdose, although the artificial respiration was commenced as soon as possible after the breathing was noticed to have stopped, it was not successful.

"25. Complete stoppage of the respiration always means that an over-

dose has been administered, and the overdose has been so great as to render restoration impossible. It is impossible to say whether, after chloroform has been pushed and then discontinued, the respiration will be restored spontaneously or not, and it is never in any case certain that artificial respiration will restore the natural respiration and blood-pressure, no matter how soon it is commenced after the respiration stops. A good deal depends on the amount of the after-fall; in some cases, even after the respiration has been restored, the pressure continues to fall and respiration again ceases, and artificial respiration then fails. We thus find respiration restored by artificial respiration while chloroform is still being absorbed, and this shows that artificial respiration does not merely pump the chloroform out of the blood, but exerts considerable influence in exciting the natural respiration.

“26. The time which elapses before artificial succeeds in restoring natural respiration varies very greatly. In one case, No. 116, it was continued for eleven minutes before the first natural gasps commenced. This period is undoubtedly prolonged in some cases by a condition of physiological apnoea, which renders it unnecessary for the animal to breathe. Consequently, whenever the pressure rose considerably during artificial respiration it was stopped, and the animal then generally breathed after a few seconds.

“27. The time which may be allowed to pass with impunity before commencing artificial respiration also seems to vary considerably. This point was not particularly attended to in the manometer experiments, except in Experiments 162 and 178, which were instituted to test the truth of the opinion formed by the Sub-Committee, that morphine had some slight action in impairing the efficiency of artificial respiration. In these cases the commencement of artificial respiration was postponed for more than two minutes after respiration ceased, and was successful; but this is certainly far above the average interval that can be allowed with safety. The success of artificial respiration restoring the blood-pressure is, in some cases, very remarkable. In Experiment No. 40, the heart had apparently ceased beating, and the dog was believed by everyone present to be dead, and yet recovered with artificial respiration. The success in this instance is due to the fact that concentrated chloroform had been pushed for two minutes regardless of the breathing, and the stoppage of the heart was due to stimulation of the vagus through asphyxia. The animal was therefore easily restored, as he was suffering more from asphyxia than from chloroform poisoning.

“28. It corresponds to these cases, which are so often reported, in which dangerous failure of the heart is said to have occurred some minutes after the administration of chloroform had been discontinued, and which are sometimes restored, and sometimes not, by artificial respiration. There is nothing at all sudden about the failure of the heart in these cases,

but the attention of the chloroformist, which has been wandering, is suddenly called to the fact that the patient is apparently dead. When the animal was really dead, it was found in some cases that artificial respiration still maintained a small amount of mean pressure in the manometer. In others the pressure seemed to fall to the zero line between each compression of the chest.

“29. The dangers of too vigorous respiration were illustrated in some of the accidental deaths. In one case the liver was badly ruptured, and in another the pleural cavity was full of blood. In three cases, Nos. 80, 92, and 103, rhythmical movements of the diaphragm were noticed after the heart had ceased beating, and after the chest had been opened. It is remarkable that in two of these cases the splanchnic nerve had been divided. The last was a case where chloroform had been injected into the jugular, and in this case there was a synchronous movement of the jaw as well. In all, death and stoppage of the heart had occurred gradually, and in No. 103 the heart was still irritable. These movements cannot be called respiration, though the last gasp of a dying animal—that ineffective jerk of the diaphragm, which is such a fatal symptom, is very likely in many cases a movement of the same character. Similar movements, which were continued much longer, occurred in Experiment No. 104, after the thorax was opened, while the heart was still beating. Still more remarkable convulsions of the muscles of the jaws, ears, and forefeet occurred in Experiment No. 167, in the case of a dog that had been poisoned with nicotine. These movements continued at regular intervals for more than ten minutes after death, and were sufficiently forcible to jerk the handles of a pressure forceps fixed on the end of the tongue off the table at each spasm. In a rabbit, in Experiment No. 153, the auricles of the heart continued to beat very rhythmically for three hours after it was supposed to be dead from chloroform, and its thorax had been laid open. Irritability of the heart after death had been noticed in many cases, but seemed to be most marked in cases where ether had been used.

“30. Chloroform injected into the heart through the jugular vein did not cause clotting of the blood, as was the case when ether was injected.

“31. In the course of the experiments of the Committee various drugs were administered, in order to ascertain if they had any effect in modifying the action of chloroform. The result showed that none of them had any effect in preventing the typical descent of the blood-pressure that occurs when chloroform is inhaled. Atropine, when given in a dose sufficient to paralyse the vagi, of course, prevents the action of these nerves in asphyxia, and, by increasing the action of the heart, it appears to cause a more rapid descent in the blood-pressure when chloroform is inhaled, as has been already explained. Morphine appeared, in No. 162, to render

the rise in blood-pressure that occurred when the chloroform was discontinued slower and less complete, and to bring about a more or less permanent condition of anæsthesia. It may be noted that the animal noted in this experiment was a monkey, and in other experiments with monkeys, when no morphine had been given, it was remarkable that the animal, after a few inhalations of chloroform, would often lie quite quiet in a state of semi-insensibility for a long time without further inhalation. Still this condition was much more marked in Experiment No. 162 than in any of the others. No action of this kind was noticed in the dog, No. 178, but other experiments (Nos. 90 and 94) showed that pariah dogs were very indifferent to the action of morphine, and it is probable that the dose of morphine in this case was insufficient to bring about the condition noted in the monkey. The peculiar behaviour of the heart in No. 178 was not the result of the previous administration of morphine, for a similar phenomenon had occurred in other cases (49 and 60), in which no morphine had been given. Experiments Nos. 162 and 178 prove conclusively that morphine had no effect in shortening the period that may be allowed to elapse between the cessation of natural respiration and the commencement of artificial respiration.

“32. The other drugs used had no effect upon the action of chloroform, except when their own special action became the leading feature in the case, as, for instance, during the vomiting from apomorphine, or the convulsions produced by nicotine.

“33. In order to test the alleged danger from shock during chloroform administration, the Committee performed those operations which are reported to be particularly dangerous in this connection—such as extraction of teeth, evulsion of nails, section of the muscles of the eye, snipping off the skin of the anus, &c. In many cases the operation was performed when the animal was merely stupified by the chloroform, and was not fully insensible. In such cases a slight variation in the blood-pressure would sometimes occur, such as one would expect from the irritation of a sensory nerve, or from the struggling that ensued; but in no case in any stage of anæsthesia was there anything even suggestive of syncope, or failure of the heart's action. In thrusting a needle into the heart there was often a momentary, but well-marked fall of blood-pressure; but even this was absent in all other injuries. If chloroform really had any power to increase the tendency to shock in operations, it is impossible to believe that it would not have been manifested to some degree at least in one or other of these numerous experiments. The Commission was, however, not content with this negative result, and determined to ascertain the effect of direct irritation of the vagi during continued chloroform administration. The results of such experiments (Nos. 65, 117, and others), proved that inhibition of the heart's action prevented, rather than assisted, the fatal effects of prolonged chloroform inhalation. An animal

that was put into a condition of extreme danger (from which it could only be restored by means of artificial respiration) by inhalation of chloroform for one minute, recovered spontaneously and readily after five minutes of chloroform inhalation, together with inhibition of the heart by electrical irritation of the vagus, carried on spontaneously. In one of these experiments (No. 117) chloroform was pushed for seven minutes, and during continued irritation of the vagus the animals repeatedly came round without artificial respiration. The danger really begins when the irritation is discontinued, or fails to inhibit the heart, and thus enables the chloroform in the lungs to be rapidly absorbed and thrown into the system. This danger is certainly increased by deliberately pumping the chloroform into the lungs by means of artificial respiration; for animals in which this was done, although they showed a tendency to recover when the chloroform and irritation of the vagus were discontinued, afterwards died rapidly.

“34. On another occasion, during Experiment No. 117, the animal was very nearly killed by a comparatively short inhalation of chloroform, owing to the electrodes becoming accidentally short-circuited, and failing to keep up the irritation of the vagus. Something similar occurred in No. 177, the effect of the irritation of the vagus passing off while the chloroform was still being pushed, and thus putting the animal into a condition of extreme and unexpected jeopardy. Nothing could be more striking than these near approaches to accidental death from failure to irritate the vagus efficiently.

“35. Other experiments were made to test the truth of the statement that chloroform increases the action of electrical stimuli applied to the vagus, and showed conclusively that it had no such effect. In one instance only the inhibition seemed to be intensified as the chloroform was commenced, and diminished when it was discontinued. But apart from the fact that the supposed effect ceased much too suddenly, a repetition of the experiment on the same and other animals showed that there was in reality no such effect. The increased inhibition in this instance was due to the chloroformist compelling the attendant who was holding the electrodes to change his position, and thus making him unconsciously apply them more efficiently; when the chloroformist withdrew, they were applied to their former position. This affords an instance of the care that has to be taken in making experiments, if one is not to be deceived.

“36. To test the effect of shock due to vaso-motor change rather than affection of the heart, Goltz's experiment on the frog was repeated on three dogs. In one there was a slight lowering of pressure which was not extensive, and in the others no effect was produced at all. Other operations which seemed likely to produce shock, such as violent blows upon the testicle, were singularly devoid of effect. Failing to lower the blood-pressure by any of these methods, recourse was had to section of

the splanchnics; but the low condition of blood-pressure this produced appeared, like stoppage of the heart from vagus irritation, to be a source of safety rather than of danger during chloroform administration. In this connection Experiment No. 111 may be studied. There was not much external hæmorrhage, but the splanchnics were divided—a proceeding which, as is often said, bleeds the animal into his own vessels. The pressure after this was extremely low, but chloroform was repeatedly given, and various other actions taken, and then chloroform had to be pushed on a saturated sponge, enclosed in a cup, for eleven minutes before respiration ceased.

“37. The experiments on dogs that had been dosed with phosphorus for a few days previously show that the fatty, and consequently feeble, condition of the heart and other organs so produced has no effect in modifying the action of chloroform. The ease with which vagus irritation and the Glasgow trace could be produced in these animals by even slight degrees of asphyxia was very remarkable; but this was equally the case in dogs that had been given phosphorus only a few hours before the experiments, and whose organs were not yet fatty. Many of these cases were in the last stage of phosphorus poisoning, and several of their companions died, without any experiment having been performed upon them, before or on the same day as they did. Numerous attempts were made in these animals to produce shock by operations in the recumbent and vertical positions, but without any more result than in those that were healthy.

“38. The truth about the fatty heart appears to be that chloroform *per se* in no way endangers such a heart, but, on the contrary, by lowering the blood-pressure, lessens the work the heart has to perform, which is a positive advantage. But the mere inhalation of chloroform is only a part of the process of the administration in practice. A patient with an extremely fatty heart may die from the mere exertion of getting upon the operating table, just as he may die from mounting the steps of his own hall-door, or from fright at the mere idea of having chloroform, or of undergoing an operation, or during his involuntary struggles. Such patients must inevitably die occasionally during chloroform administration, and would do so even were attar-of-roses or any other harmless vapour substituted for chloroform.

“39. The effect of hæmorrhage was tested by opening the femoral artery and allowing a considerable quantity of blood (8 to 12 ozs.) to escape. An immediate lowering of the blood-pressure results, and this is very slowly recovered from. Such an accident, however dangerous it may be in itself, in no way affects the action of chloroform, except in so far that a patient who has been nearly bled to death would require less chloroform in his system to put him into a state of anæsthesia. The low condition of his blood-pressure produced by the hæmorrhage would tend to prevent

the too rapid intake of chloroform, exactly as in the case of cutting the splanchnics.

“40. When the hind feet are lowered on to the floor, so as to place the animal in the vertical position, a considerable fall of blood-pressure in the carotid artery occurs; but when the animal is replaced on the table in the recumbent position, the pressure is fully restored. Various operations were performed on animals in the vertical position, but in no case was anything resembling dangerous shock produced. Inversion of the body, so that the animal stands on its head, has exactly the opposite effect—the pressure rising in the carotid artery and again falling to its former state when the animal is replaced in the horizontal position. Inversion of the body failed to restore an animal that was in the last stage of chloroform poisoning, though it raised the pressure in the usual way as long as it was continued. The change in the pressure of the blood of the carotid, which occurs when the position of the body is changed, appears, therefore, to be due simply to the effect of gravity.

“41. As regards the effect of chloroform upon different animals, it may be said to be the same as far as its anæsthetic action is concerned. There are certain peculiarities in its effect on the respiration and circulation connected with its local irritant action on the nostrils and fauces which are interesting to notice. Thus, when concentrated chloroform vapour is applied to the nostrils of rabbits they hold their breath, and the heart's action is slowed at once. This is always said to be due to reflex inhibition of the heart from irritation of the usual branches of the trigeminus reflected through the vagus, and is by no means peculiar to chloroform, but is produced equally by any irritant vapour, such as ammonia or acetic acid.

“42. In some dogs, and especially those to whom phosphorus has been given, stoppage of the respiration and slowing of the heart occurred immediately after the application of the chloroform to the face or on forcibly pulling out the tongue, and this suggests that the mechanism of cardiac arrest is precisely the same as it is in the rabbit. On the other hand, in rabbits, as in all other animals, it is possible to give chloroform so gently that no spasm of the chest occurs, no reflex action is produced, and then the pressure falls in the same regular curve and with the same succession of phenomena (anæsthesia, cessation of the respiration, and, lastly, cessation of the heart-beat) that was above described as typical of chloroform inhalation.

“43. Goats have a great tendency to hold their breath while inhaling chloroform, and monkeys resemble dogs rather than rabbits, as when ammonia was held before a monkey's nose it did not cause immediate stoppage of the respiration and heart as it does in rabbits.

“44. The experiments with ether show that it is impossible to produce efficient anæsthesia with this agent, unless some form of inhaler is

used which thoroughly excludes the air. If an ordinary cup containing a sponge saturated with ether is applied very closely to the face, the animal generally holds its breath and struggles, and we at once get the fall of the blood-pressure and slowing of the heart that invariably occurs under these circumstances. If the ether is continued in this way after the animal has recommenced breathing, a condition of semi-anæsthesia results, in which the cornea is sometimes sensitive and sometimes insensitive, and the pressure rises and falls alternately to a slight amount and forms a wavy trace, which may be continued right round the drum without any particular change. As soon as the air is rigidly excluded, the pressure commences to fall gradually exactly in the same way as with chloroform, and with the same succession of phenomena—viz., first anæsthesia, then cessation of the respiration, then of the heart movements, and finally death. How far this is due to ether, and how far to the results of asphyxia, it is impossible to say, but an exactly similar succession of events can be brought about by making the animal inhale carbonic acid gas alone.

“45. If surgeons chose to be content with a condition of semi-anæsthesia, it can, no doubt, be produced with perfect safety, though with discomfort to the patient, by ether held closely over the mouth. Such a condition of imperfect anæsthesia would never be accepted by any surgeon accustomed to operate under chloroform. If more perfect anæsthesia is required, it can be procured by excluding the air more rapidly; but then there is exactly the same danger as in giving chloroform. How very suddenly and rapidly the pressure may fall and death ensue is well shown by Experiment No. 33. Ether injected into the jugular vein produces a fall of blood-pressure and anæsthesia in the same way as chloroform does; but in all cases in which it is so injected, large clots are found in the heart immediately after death. It is interesting to note that Claude Bernard seems to have formed a very similar opinion with regard to ether, as the following quotations from his work, entitled ‘*Leçons sur les Anesthésiques et sur L’Asphyxie*,’ published in 1875, show. The first quotation (page 50) is as follows:—‘Aussi un certain nombre de chirurgiens proposèrent-ils d’abandonner le chloroforme pour revenir à l’éther, dont l’usage paraissait moins à craindre. Aujourd’hui encore, les chirurgiens de Lyons emploient préférablement l’éther. On croyait le chloroforme plus dangereux que l’éther parce qu’il était plus actif; mais, en réalité, la fréquence relative des accidents par le chloroforme tenait peut-être tout simplement à ce que c’était cet agent anesthésique qu’on employait dans l’immense majorité des cas. Plusieurs discussions ont été provoquées par les partisans de l’éther, sur tout par les représentants de l’école de Lyons, et il a été constaté que l’éther, lui aussi, avait produit un certain nombre d’accidents mortels. Les deux agents anesthésiques usités peuvent donc, l’un comme l’autre, entraîner

quelques risques de mort, et la chirurgie humaine a conservé presque partout le chloroforme, dont l'action est plus rapide et plus complète.' The second quotation, to be found on page 101 of the same work, runs :— "Quant à l'éther et au chloroforme, l'action est à peu près la même au point de vue physiologique, sauf une différence d'intensité en faveur du chloroforme, ce que nous fera généralement employer ce dernier corps de préférence à l'éther.'

"46. The A. C. E. mixture, given gently with plenty of air and the other conditions mentioned before under chloroform, produces the typical chloroform trace. Given freely to a struggling animal, it can produce a very rapid and dangerous fall of blood-pressure. In Experiment No. 52, Fick 4 shows very perfectly the effect on the heart of holding the breath."

(*To be continued.*)

An Atlas of Illustrations of Pathology. Fasc. VIII. Diseases of Brain and Spinal Cord. Plates XXXVI. to XLI. London: The New Sydenham Society. 1891.

NEW ground is broken in this fasciculus, and we have a first instalment of beautifully-coloured plates illustrating affections of the central nervous system. Several of the plates are copied from Auvert's atlas; others are derived from Mr. Hutchinson's portfolio.

Plate XXXVI. depicts, in Fig. 1, a hydatid cyst in the posterior cornu of the right lateral ventricle.; and in Fig. 2, an abscess in the right cerebellar hemisphere.

Plate XXXVII. illustrates cerebellar hæmorrhage, cerebellar tubercle, and a large tubercular mass situated between the pons and cerebellum.

The three figures in Plate XXXVIII. illustrate the effects of injuries to the spinal column, attended by contusion of the cord; and Plate XXXIX. represents a tubercular tumour on the spinal dura mater. Other morbid conditions of the spinal cord are illustrated in Plates XL. and XLI.—viz., cartilaginous deposits on the spinal arachnoid, myelitis after concussion of the spine, tubercle in pia mater of the cord, and a fibrous tumour in the cauda equina.

All the plates are of a high order of excellence, but the pathological details accompanying them are sometimes scanty and imperfect.

The Memoirs (chiefly Autobiographical), from 1798 to 1886, of Richard Robert Madden, M.D., F.R.C.S.; formerly Colonial Secretary of Western Australia; H. M. Commissioner of Inquiry into Slave Trade, West African Settlements; Author of "Travels in the East," "Memoirs of the Countess of Blessington," "Lives and Times of the United Irishmen," &c. Edited by his son, THOMAS MORE MADDEN, M.D., F.R.C.S.E. London: Ward and Downey. 1891. 12mo. Pp. 328.

WE thank Dr. More Madden for these Memoirs of his distinguished father. We have read them with great, though mainly unprofessional, interest. Indeed, of medical material, such as justifies a notice of the book in the pages of a medical journal, there is but little—Dr. Madden's career having been social, literary, and political, rather than medical. The account of the earlier stages of his professional education and wanderings remind us irresistibly of the adventures of Gil Blas; but in 1823 he became a regular member of the profession, taking the diploma of the London College of Surgeons and the license of the Apothecaries' Company. From this time he combined somewhat desultory medical practice with journalistic and other literary work, and with unceasing efforts in the cause of liberty, more especially on behalf of the negro slaves and the Australian aborigines. With this part of Dr. Madden's long and active life it is not within our province to deal; but we recommend this account of it for perusal as strongly as we can. We shall be content to notice briefly some portions of the narrative which exhibit the subject of it, not as the writer or the politician or the philanthropist, but as the physician.

In 1824 Dr. Madden tried Constantinople as a field for medical practice, but the methods did not suit him and he left it soon. His account of his experience there is most amusing. Each "doctor"—there were at that time about fifty of them, mostly from Italy or Malta, of whom perhaps five had received a medical education—maintained a Greek dragoman, whose business it was to tout for patients and extol his employer's skill. Dr. Madden's jackal taught him that the golden rules of Constantinopolitan practice were three: 1, fee before advice; 2, ask no questions of the patient; 3, give no intelligible answers to the patient's friends. Symptoms were to be sought in the pulse alone; prognosis was to be limited to "Inshallah" ("please God!") in

doubtful, and “Allah kharim” (“God is merciful”) in desperate cases. Thus instructed, the expectant practitioner took his seat in a coffee-shop, where he overheard his *fidus Achates* tell the surrounding Turks how he had seen his doctor, a few days before, remove and scrape a patient’s liver, how the sick man recovered—and how the grateful patient had paid a handsome fee of five purses. The result was satisfactory.

“A well-dressed man who had been sitting at my side in silence for half an hour, at last recollected that he had a wife or two unwell, and very gravely asked me ‘what I would cure a sick woman for?’ I inquired her malady. ‘She was sick.’ ‘In what manner was she affected?’ ‘Why, she could not eat.’ On those premises I was to undertake to cure a patient who, for aught I knew, might be at that moment *in articulo mortis*. I could not bring myself to drive the bargain, so I left my enraged dragoman to go through the pleasing process. I heard him ask a hundred piastres, and heard him insist by his father’s head and his mother’s soul that so good a doctor never took less. However, after nearly an hour’s haggling, I saw fifty piastres put into his hand. I visited my patient, and had to ascertain her disease as well as I could with a door between us, she being in one apartment and I in another; the door was ajar, and through this her head, enveloped in a sheet, was occasionally projected to answer my questions. I, however, was enabled to collect enough in this way, and from the attendants, to cause me to suspect that she had cancer. I did all that, under such circumstances, I could well do. I gave her an opiate; and after smoking the inevitable pipe and drinking sherbet, took my leave.”

In another case the patient was a pasha of high rank surrounded by doctors in consultation. A Turkish priest made an oration. He had consulted the Koran and found that the word “honey” was repeated thirty-six times. His Highness had been thirty-six days ill. The inference was obvious. Let the pasha have thirty-six drops of “oil of wax” every thirty-six hours. The other consultants acquiesced, as discussion was forbidden, and pocketed four dollars each. The patient died. Our doctor, as he withdrew, remarked to an Armenian *confrère* that the proposed remedy was unusual. The other looked round cautiously and whispered “poison;” the bulk of the sick man’s property being left to a mosque. Dr. Madden went back (in spite of his dragoman’s remonstrances) and warned the attendants that the man would die if he took the medicine. It became clear that such unprofessional conduct would not do in Constantinople, and Dr. Madden gave up his practice.

Changing the venue to Alexandria, Dr. Madden, in 1825, came in for a severe epidemic of plague, of the extreme contagiousness of which—although he himself escaped completely—he gives some instances. He visited a patient said to have had apoplexy, but really suffering from plague. On his return he changed his clothes and gave those he had taken off to his Maltese servant to hang up. Next day but one the latter was taken ill of the disease. On his way to hospital he called in to see his brother; *he* was seized three days later, and being bled, according to the ordinary routine practice, died *secundum artem*. Dr. Madden adopted a stimulant plan of treatment, with cold applications to the head and hot cataplasms to the buboes, and 75 per cent. of his patients recovered. He attributed his own freedom from infection to his insisting on free perfilation of the wards, to wearing an impervious oilskin garment, to having eaten or taken a glass of wine before visiting a patient, and to smoking incessantly while he continued in presence of the sick. Though he thus (as he supposed) escaped plague, he came near succumbing to a combined attack of dysentery and an Alexandrian doctor. In despair he ordered his doors to be closed against his medical adviser, took scruple doses of calomel for three successive days, and got well.

In 1822 he was practising at Naples, and he tells us an amusing episode of his Neapolitan experience. One of his patients was Lord Charles Murray, son of the Dowager Duchess of Athol, who was mentally deranged after an attack of brain fever. He was anxious to visit an old friend, the Marchioness of Anspach, and his physician accompanied. For a short time the visit proceeded quietly, but the conversation became explosive, and Dr. Madden with some difficulty got his charge to the gate. The Margravine accompanied them, and then Lord Charles “insisted on showing her a new mode of entering a carriage, which he particularly recommended her to adopt; he then made a rush towards the carriage-door, and, putting his hand on the window-frame, made a jump of that kind which harlequins and clowns are wont to make through panels in pantomimes, and fairly launched the upper part of his body through the window, leaving his long legs on the outside, kicking furiously in all directions.” It was necessary to enter the carriage by the other door and pull the patient through. Lord Charles recovered his reason; but died in 1824, at the age of twenty-five, in Greece, after

suffering great privation and fatigue in the cause of Grecian liberty.

In 1836 Dr. Madden visited New York, for the second time. He visited the State Prison, then on Blackwell Island; and we quote his description of the system of solitary confinement then practised:—

“I was painfully impressed by the rigour of the solitary confinement, which far exceeded anything of the kind I had ever seen elsewhere. In one of the cells I saw, through the small grated aperture in the door, a young Englishman who had been sentenced to five years’ solitary confinement for forging American bank notes. This prisoner had already been in his dismal cell— $7\frac{1}{2}$ feet by 5—three years, and had two years more to remain there. I asked the chief warder if this unfortunate man was allowed to have any book, such as a prayer-book or a bible, in his cell. ‘Nothing of the kind; no sort of amusement is allowed,’ was the answer. ‘Do you mean to say the bible or a prayer-book would be considered an amusement?’ I asked. ‘The reading of it would serve to distract the mind,’ said he, ‘and therefore all books are forbidden.’ The same official told me he had been five years in that prison, and had not known a single case of madness occurring there, which, I confess, much surprised me; nor, according to him, had any prisoner died whilst under solitary confinement during that time.”

Before concluding our notice of Dr. Madden’s Memoirs we must give an example of Poor-law dietetics, which is, we fear, typical of Bumbledom in the sad years which followed the Great Famine. In 1850, in the Kilrush Union, the average weekly cost of a pauper was $10\frac{1}{4}$ d., hospital and infirmary patients included. Excluding these, each pauper was fed for less than 8d. per week. What was his diet? Our author compares the Kilrush dietary with that of St. Pancras Workhouse, justly premising that “the present dietary of the English workhouses has been reduced to the smallest amount of nutritious food deemed sufficient to maintain life in health and strength.” The following is the amount of food considered sufficient for this purpose for one week by the Kilrush Board of Guardians in 1850:—Bread, 7 lbs.; Indian meal in stirabout, $3\frac{1}{2}$ lbs.; “soup,” 14 pints, each pint containing 2 oz. oatmeal and 2 oz. vegetables; cocoa, 3 pints. The St. Pancras dietary included 18 oz. of meat, $2\frac{1}{4}$ lbs. of vegetables, $14\frac{1}{2}$ pints of milk and 29 oz. of meal in porridge, 12 oz. of pudding, 6 oz. of cheese, and 11 pints of beer. No meat, no milk, no vegetables, no cheese, no beer, in Kilrush!

and the bread, "composed of equal parts of rye and barley, is black, clammy, badly baked, unsightly, and distasteful," was unfit for human food. Even in the overcrowded infirmary, the medical officer reports, the milk supply was 150 to 180 quarts short. It is needless to add that the mortality amongst these poor starved creatures was appalling.

We repeat that we thank Dr. T. More Madden for these extracts and abstracts from his father's *Memoirs*; and we should have thanked him more warmly if the work had been better done. We get a great deal too much poetry, in complete oblivion of the Horatian dictum—

Mediocribus esse poetis

Non homines, non di, non concessere columnæ;

while prose narrative, which we should have read with great interest, is excised because the story is told in some other work long since out of print. As to the printing of this book, it is most discreditable to editor, publishers, and printers—the last of whom have the good taste to conceal their names. Misprints abound on almost every page.

The Retrospect of Medicine. Edited by JAMES BRAITHWAITE, M.D., London. Volume 104, July–December, 1891. (Issued January, 1892.) London: Simpkin, Marshall, Hamilton, Kent & Co., Limited. 8vo. Pp. 432.

THIS old-established and ably-edited half-yearly journal maintains the high reputation it has long enjoyed as a faithful record of contemporaneous medical and scientific progress.

The present volume consists, as usual, of a synopsis, arranged alphabetically and containing an abstract of the principal articles which were published in the *Medical Journals* during the half year, and of sections on Medicine, Surgery, and Obstetrics and Gynæcology.

The Editor has done his work well, and we congratulate him on the green old age of "*Braithwaite's Retrospect*"—a publication which has stood its ground as a book of reference against tremendous odds in these days of modern medical journalism.

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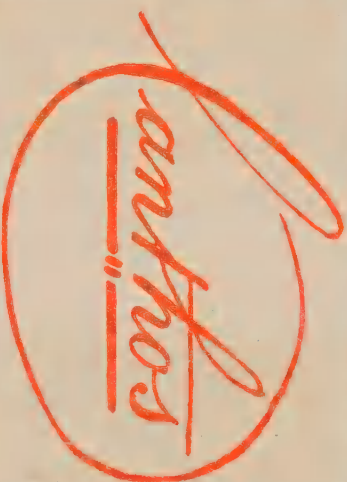


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MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

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General Secretary—W. THOMSON, F.R.C.S.I.

SECTION OF STATE MEDICINE.

President—E. MACDOWEL COSGRAVE, M.D.

Sectional Secretary—NINIAN FALKINER, M.B.

Friday, February 19, 1892.

The PRESIDENT in the Chair.

The Control of Inebriates.

DR. COSGRAVE read a paper on the above subject. [It will be found at page 177.]

DR. DAVYS considered Dr. Cosgrave's paper a valuable contribution to the treatment of the inebriate. With reference to the second class referred to by Dr. Cosgrave, the intermittent drunkard, Dr. Davys considered (and quoted cases in support of his assertion) that the only successful treatment or cure of the intermittent drinker is, the moment his family call on their physician to prescribe for the inebriate, for the doctor, with the approval of the family of the patient, to employ a strong male-attendant to wait on the inebriate, and by physical force prevent him taking any alcohol, the patient to be kept in his house. Much greater privacy is thus observed than by sending him to a Retreat; and having to bring him before a magistrate, as suggested in Dr. Cosgrave's paper, is obviously objectionable. The adoption of the course suggested by Dr. Davys effects a cure so far in about three days as to enable the inebriate to resume, in perfect sobriety, his ordinary avocation. The same course should be adopted when, at the succeeding period, sometimes

In two or three months, the patient breaks out again. The latter, when returning to his sober state, fully approves of the course adopted by his physician.

MR. EDGAR FLINN thanked Dr. Cosgrave for his most interesting paper. He quite agreed that the regulations for getting dipso-maniacs into Retreats under the Habitual Drunkards' Acts were made too stringent. They should be more relaxed, and such places would be much more availed of. It was a pity that the Habitual Drunkards' Act was not applied to Ireland, for it certainly was required, and would act most beneficially. Retreats in England for habitual drunkards did good in some instances, but in Mr. Flinn's experience they always failed in a cure, unless the patient was committed to the Retreat under a warrant. Persons addicted to drink were a class very difficult to treat by drugs; the radical cure, no doubt, was to remove them to some place where they would be prevented from obtaining drink—in fact, in some instances, they might with propriety be placed in asylums.

DR. J. W. MOORE instanced three cases of intermittent inebriety which had come under his observation, and expressed the opinion that physical restraint was a much more reliable means of treatment than any medicinal remedies. He alluded to the unscrupulous way in which vendors of alcoholic beverages supplied the unhappy victims of inebriety with wine or spirits. He considered that the use of the terms "beastly" and "bestial," in connection with drunkenness, was a libel on the brute creation. The whole question of the control of inebriates was well worthy of the attention of the legislature of the country.

DR. THOMAS DONNELLY agreed with the previous speakers as to the value of physical restraint in the treatment of inebriates, and the necessity which exists for greater power in using it.

DR. COSGRAVE, in reply, said that intermittent inebriety was undoubtedly the most interesting form from a scientific point of view. Dr. Davys' treatment of restraint by a stalwart attendant was good, if the patient would submit to it; but there was no power to compel him to do so. Easy admittance into an inebriate asylum for a short period exactly meets such cases, affording a chance of tiding over attacks. Inebriety often caused neuroses in the descendants, sometimes whole families being affected with hysteria, epilepsy, inebriety, &c. In one case he (Dr. Cosgrave) had seen inebriety once in three generations. A lady, aged nearly seventy, suffered from intermittent attacks, her daughter died of *delirium tremens* at about thirty, and her daughter was seen under the influence of drink when only fifteen years old. The Reports of the Somerset House authorities show that alcoholic drinks are now seldom adulterated, so the evil done must be laid to the charge of the alcohol itself.

Pollution of the South-eastern Foreshore of Dublin.

MR. EDGAR FLINN read a paper on the pollution of the south-eastern foreshore of Dublin.

He pointed out that the pollution at Dublin, extending from Merrion to Kingstown and Sandycove, not only existed but was increasing, and that although several partial attempts had been made to remedy this state of affairs, nothing radical had been effected; that this state of sanitation, at places claiming to be health-resorts, was particularly reprehensible.

There are eight main sewers and thirty minor ones at present discharging into the sea at this locality. He advocated a deep-sea outlet, such as Llandudno possesses, which has been so advantageous to that town. In addition, he recommends an intercepting sewer, in which the sewage is to be collected and then discharged at about 600 feet from the shore, at a depth of 30 feet below the level of sea water.

He concluded his paper by a criticism of the present methods of disinfecting sewage, and referred to that of Messrs. Adeney and Parry, known as the oxygen process, which has the advantage of precipitating the solid matter of sewage without the addition of precipitative chemicals.

DR. DONNELLY remarked that, as precipitation has been so successful in many places, it could be adopted at the Salthill outfall, and avoid polluting the sea so close to the best bathing-place near Dublin—that is, Sandycove.

DR. COSGRAVE strongly urged the importance of not carrying out new drainage into the sea, but of substituting precipitation as used so successfully at Drumcondra, and as about to be introduced in Dublin. At Llandudno the drainage is successful—for Llandudno, but not for the Conway estuary, which, fortunately, is not fringed by houses as Kingstown and Dalkey are. Messrs. Parry and Adeney's method seems the most promising.

DR. PARSONS asked if any bacteriological investigation of the effluent liquid after precipitation had been made, and if so with what result?

MR. FLINN replied in the negative.

Thursday, March 3, 1892.

The PRESIDENT in the Chair.

The Present Position of Dispensary Medical Officers in Ireland, and Suggestions for the Removal of their Just Grievances.

DR. THOS. DONNELLY read a paper on the present position of dispensary medical officers in Ireland, and suggestions for the removal of their just grievances. [It will be found at page 275.]

Residential Disabilities of Medical Officers in Rural Districts.

MR. P. M. LAFFAN read a paper on the residential disabilities of medical officers in rural districts. [It will be found at page 280.]

MR. WM. THOMSON said he had no criticism to offer on the paper, because he concurred in its general tendency and recommendations. He referred to the habit of signing tickets *en bloc*, and mentioned the decision of the Local Government Board in their instructional memorandum of 1885 in these words:—"Persons empowered to issue tickets for medical relief under the Medical Charities Act, cannot delegate that power to others. Such tickets should not be signed in blank, and left to be filled up by other persons." Yet recently the same Board had decided, in the case of the Castlereagh district of the Belfast Union, that the practice which they condemned in 1885 was not illegal. He called attention to the proposal in the Local Government Bill to transfer the sanitary service appointments to the County Councils, and urged the dispensary doctors to consider the effect of this intended legislation. As to the State service, he pointed out that it would not be more costly, that it would be more efficient, and that entrance by examination would secure the best professional men regardless of other considerations.

DR. FINNY fully concurred in the importance of the subject dealt with by the papers which had been read, and considered that this importance was to be measured not only from the point of view of the existing poor-law medical officers, but from the wider grounds of medical education and collegiate status. As President of the Royal College of Physicians he reiterated what he had stated on other occasions—that the interests of the College and of its Licentiates were intimately connected with the status and relations of the poor-law medical officer, and that it was a serious fact that owing to the real and most serious grievances of the dispensary medical men, the best men who take the Licenses of this College are debarred from taking office in this country, and that they have to seek their living in the mining and manufacturing districts of England or in the Colonies. Until these grievances be remedied this state of things will hardly be altered, and the effort of the dispensary medical doctors to have them remedied he could promise will be fully supported by the influence of the Royal College of Physicians. It would be well, however, that a concentration of effort should be made, and while the grievances are many and real, in the forefront he would point out the question of "Superannuation;" and he felt that should united effort be brought to bear on the Government on this point the Government would grant it—and one at least, and might he say the greatest grievance, would be removed.

The PRESIDENT mentioned that when acting as *locum tenens* for a dispensary medical man he was sent a red ticket, directing him to visit

the warden who signed the ticket. He also expressed the indebtedness of the Section to Mr. Laffan for coming up and laying his valuable paper before the Academy.

DR. J. W. MOORE referred to the very unsatisfactory position in which the Dispensary Medical Officers of Ireland, acting as District Medical Officers of Health under the Public Health Act of 1878, were placed, mainly in consequence of the Orders to sanitary authorities issued by the Local Government Board under the Act in question, particularly as regards the question of salary. The duties required of the District Medical Officers of Health were irksome and onerous, and yet the Local Government Board in 1874 sent a General Order to the sanitary authorities throughout the country to the effect that the salaries paid to the medical officers of health should not exceed one-fourth of the amount of their salaries as dispensary medical officers. This objectionable maximal scale of remuneration was indeed withdrawn *in name* when the Public Health Act of 1878 became law; but no material change for the better was effected. In conclusion, Dr. Moore alluded to the provisions of the Local Government (Ireland) Bill, 1892, which touched upon the interests of the Dispensary Medical Officers acting as District Medical Officers of Health.

MR. P. M. LAFFAN said:—I quite agree with Dr. Donnelly that it would be very desirable to have a definition of a “poor person” within the meaning of the Act; but I think the State could not give a narrow definition, as in a matter of charity and philanthropy it is bound to regard with a more paternal solicitude the interests of the larger number of its subjects than those of a limited portion of the community such as Dispensary Medical Officers; it is bound to be broad rather than contracted in the interpretation it may put on this branch of legislation, and looking at the subject without prejudice we cannot fairly demand more than secondary consideration. Therefore it is incumbent on us to advocate such rules as will counteract any vagueness that may still be permitted to continue as to the persons legally entitled to gratuitous medical relief at the public expense. This, I believe, can be done by limiting the number of issuers of tickets, and allowing only responsible persons to possess the power of distributing them, and also by increasing the facilities for cancelling those given to non-qualified recipients. To Dr. Donnelly’s admirable suggestions in this direction, I think this one might be advantageously added:—That a list of the names of the cancelled persons be posted in a conspicuous position on the outside of the dispensary after every meeting of the Committee, but that before doing so the Hon. Sec. should send a notice to them that their names would be published on the “List for the Prevention of Imposition” on a certain day, unless they produced a certificate from the doctor that he exonerated them from further responsibility, or they proved their inability to pay to the satisfaction of the

Committee. This, I believe, would have a very salutary effect, as they would recoup the medical attendant rather than have their names publicly placarded, if able to do so. Dr. Donnelly's suggestion that a mileage rate should be given to dispensary officers, if carried out, would be a recognition of the principle that the reward should be proportional to the labour, and though some difficulties would at first be experienced in the calculations, this would soon disappear; still I confess that an increase of salary based on the annual number of miles travelled per annum seems to me to be more free from objection.

Leave of absence.—This scarcely demands any observation; it goes without saying that a man working day and night—a sort of human machine—must, at least, once a year require a thorough change for mind and body, and, I believe, the public would gain rather than lose by it, as the holiday-seekers could combine pleasure with instruction, and they would derive both by visiting the great hospitals at home and abroad, in addition to physical benefit from variety of scene; they would return with their minds expanded after drinking, so to speak, at those grand fountains of knowledge. The double expense—the payment of the *locum tenens* at home and the travelling outlay—deters many practitioners from taking a respite from their labours that would be associated with advantages for themselves and their patients.

The suggestion that all the medical officers of the Union should be *ex-officio* attendants of the Workhouse Hospital within it, is certainly an original proposal, and has to recommend it—

1st. It would bring the medical men into closer contact with each other, and afford opportunities for interchange of opinions and views on medical matters.

2nd. It would be of unspeakable advantage in the way of giving them hospital experience. The dispensary work of the district for the man doing both duties could be lessened by his bringing in cases living at a long distance, as it is a well-known fact that where a doctor holds the dual position he can more easily induce patients to go to hospital.

3rd. It would stimulate a certain amount of healthy rivalry, and encourage scientific research and study.

As regards making us direct Officers of State, Mr. Thomson anticipated me in reminding you that the Irish medical officers are at present half paid out of Government funds. This being so we are a good part of the way towards being civil servants, and are not logically exorbitant therefore in requesting to be placed on the same lines as regards pensions, holidays, &c., with those who are, so to speak, only a little in front of us; and when our salaries will be increased by another contribution from the Treasury—which we hope will be one of the outcomes of the present agitation—we shall be well advanced on the road, and intelligence and perseverance, with unity and time, will soon bring us to the final goal of

a special State department, presiding over the medical officers of the country and sanitarians. This subject is so extensive in itself that if treated with the importance it demands, an entire night for its discussion in this Academy would scarcely exhaust its many phases.

SECTION OF SURGERY.

President—H. G. CROLY, President of the Royal College of Surgeons in Ireland.

Sectional Secretary—R. L. SWAN, F.R.C.S.I.

Friday, March 4, 1892.

The PRESIDENT in the Chair.

Recent Specimens.

Recent specimens were exhibited by Mr. Wheeler, Mr. Thomas Myles, and Mr. Pratt. The President exhibited some living examples of results of excision of elbow. Mr. Swan: some examples of rectification of aggravated equino-varus by the section devised by exhibitor.

The Treatment and Origin of Hammer-toe.

MR. SWAN then read his paper on the treatment and origin of hammer-toe, and demonstrated that the skeleton was at fault. He deprecated the treatment usually recommended, of division of certain of the soft tissues. From a number of facts which he stated as to the functions of the toes in certain races, and the functional adaptability of the second toe, and from a comparison of the feet of anthropoid apes with the lower and higher types of the human foot, and from a review of the embryological development of the human foot, he refers the distortions of equino-varus and other congenital aberrations from the higher type—hammer-toe included—to either an arrest of the evolutionary process, or to a reversion to a lower type, with an unequal development of the osseous and soft tissues.

MR. HAMILTON considered the Academy was indebted to Mr. Swan for his paper, which was characterised by originality and research, as well as by practical usefulness. The surgeon was apt to follow routine, and he had himself on many occasions divided the flexor tendons for this affection. He had no doubt, from what he now saw, such teaching was erroneous. He had himself been struck with the functional usefulness acquired by the toes, as illustrated by the divers in the Bay of Naples.

MR. T. MYLES congratulated the Section on the pleasure and benefit they had derived from listening to Mr. Swan's very exhaustive paper. The speaker, however, disagreed with some of Mr. Swan's statements, and considered that his deductions were hardly warranted in their

entirety. For instance, the second toe, normally, was not shorter but always longer than the first. Mr. Myles pointed out that in the condition under discussion the position of flexion of the second toe had the effect of removing the broad anterior extremity of the phalanx from between the first and third, and was, in fact, nothing more than a spontaneous effort to diminish the effects of the crowding together of the toes by tight boots. If Mr. Swan's theory were true, it ought to be equally common amongst people who do not wear boots as amongst those who do.

MR. WHEELER thought that the last speaker argued from the particular to the universal. In any cases he had seen of hammer-toe he was led to believe that it was congenital. On two occasions he excised the joint and placed the toe in the straight position.

MR. PRATT referred to the evolutionary development which occurred in the feet of birds as having some bearing on Mr. Swan's explanation of the origin of this affection.

The PRESIDENT also spoke.

Some Remarks on Excision of the Elbow-Joint.

The PRESIDENT (Mr. Croly) made a communication on elbow resections. He performed the operation close on fifty times in hospital and private practice. He first described cases suitable for excision, and said the last thing that entered his mind in elbow-joint disease was amputation. Fortunately in disease of the elbow the humerus was more extensively diseased than the bones of the forearm. He exhibited two cases of excision in the Library before the meeting. One on a man operated on about six years ago for ankylosis in bad position. The man, over fifty years of age, has quite as good use of the arm operated on as the other. The second case, a sailor, R.N., was operated on over two years ago. His arm is quite as useful as the other; he can row in a boat. The members examined both cases, and were surprised at the strength of the arms.

The President, in describing the second case (the sailor), stated that the disease in the joint followed a fall on the deck of H.M.S. *Superb*. So little was the joint altered that doubts were expressed as to any disease, and the patient was treated as a malingerer for seven months. On his return home he was advised to consult the President. There was very little swelling in the joint, but a peculiar "elasticity" on pressing the bones of the forearm against the arm, also on lateral movement. The joint was found extensively diseased when laid open.

He prefers the single incision, which he makes about 5 inches long. He recommends the arm to be held as straight as possible during the operation, and frees the structures on the external side of the joint *first*. The ulnar nerve, in diseased joints, in his experience is not necessarily seen. He removes the olecranon first, next head of radius, and lastly,

the condyles. He laid particular stress on the importance of removing a portion of the *shaft* of the humerus in addition to the condyle, otherwise a stiff joint would be sure to follow.

He exhibited a number of specimens of his cases from the Museum of the College, showing the amount of bone removed. He also exhibited a radius and ulna from the Bone-room of the College, showing the insertions of the biceps and brachialis anticus, the latter insertion being sufficiently low to allow of the removal of the coronoid process. He laid stress on the importance of early passive movements. If sufficient bone is removed there is no fear of ankylosis. In his experience arms, after excision, are not really useful before the expiration of six months to a year.

MR. WHEELER said that he had also cases in which there were scarcely any symptoms to warrant operation as far as external appearances. Some of these cases he described under the head of silent caries. As the President stated that his observations were addressed to the junior men present, and as most of the observations made were well known—in fact, might be called standard rules—he would only allude to one or two points. First, the use of Esmarch bandage in excisions of joints. Some ten years ago he read his condemnation of this bandage; in excisions of joints such as the shoulder, elbow, knee, it was not useful, and he advocated its use in excision of bones such as the bones of the foot, but his experience many years ago taught him that secondary hæmorrhage was prone to follow its application when used in joint excisions. He did not agree that the transverse incision, made in what is termed the H incision, opened when passive motion was set up, for it was below the line where flexion took place; he invariably adopted a single incision. In bony ankylosis he had practised, on one occasion, the operation suggested by Mr. Butcher, but never performed by him. Like Adams' operation, which was a modification of Mr. Butcher's, bony ankylosis always followed, for the sawn bones remained too close—the only difference being that a straight ankylosed elbow-joint could be converted into a flexed, stiff joint, which, in his opinion, was nearly as useless. The last three cases of excision of this joint he had performed, were for ankylosis in the semi-flexed position.

MR. BARTON said that in his experience excision had rarely to be performed for ankylosis in the flexed position. He endorsed what the President had stated as to the time required for a useful cure, and believed twelve months necessary.

MR. MYLES was surprised to hear the last speaker say that ankylosis was not necessary for flexed positions of the forearm. In his opinion the traditional belief that a flexed position of the forearm, that is, nearly a right angle, was wrong. He had fastened his own arm at a right angle in plaster of Paris, and found it was quite useless to him.

The PRESIDENT replied.

SECTION OF MEDICINE.

President—J. MAGEE FINNY, M.D.; President of the Royal College of Physicians of Ireland.

Sectional Secretary—A. N. MONTGOMERY, M.R.C.P.I.

Friday, March 11, 1892.

The PRESIDENT in the Chair.

Living Specimens.

DR. WALTER G. SMITH exhibited a man with Universal Alopecia.

DR. H. C. TWEEDY showed a case of Dermatitis Exfoliativa.

Case of Stricture of Sigmoid Flexure of Colon.

MR. J. P. DOYLE read a paper on a case of stricture of the sigmoid flexure of the colon in a man, forty-five years of age, who for beyond two years suffered from constipation, followed at times by slight relaxation of the bowels. He was subject to frequent attacks of colic and griping pain, with soreness and tenderness over the left iliac region. He passed at times quantities of clear or red-stained gelatinous mucus. Two attacks of obstruction with peritonitis occurred. The *post mortem* examination revealed a rupture below and at the seat of a cicatricial stricture in the sigmoid flexure of the colon. General peritonitis existed; the lumen of the intestine at the stricture would admit about a No. 10 catheter. The descending colon was thickened, purplish red, and distended with hardened fæces which pressed against the opening in the strictured portion of the gut, but did not escape into the peritoneal cavity.

The PRESIDENT asked Mr. Doyle as to the pathological nature of the stricture—as to whether it was the result of ulceration, such as is known to occur in dysentery—or of epitheliomatous cancer. He considered that the term of stricture should be limited to these two pathological conditions; or did Mr. Doyle consider that the stricture was due to the chronic peritonitis of which he spoke.

DR. W. THORNLEY STOKER having spoken,

MR. DOYLE briefly replied.

A Case of Opium-Poisoning.

MR. J. J. BURGESS read a paper on the above subject. [It will be found at page 270.]

DR. FALKINER gave an account of two cases of opium-poisoning which had come under his notice. In one a young man suffering from syphilis had drank about 5 oz. of a lotion containing 15 grains of the extract in each ounce, or 150 grains of crude opium. He was not under treatment

until 13 hours after the poison was taken, and was not considered safe until 16 hours after the treatment commenced. The interrupted current was of great service. The second was a case of a lady who was suffering from severe neuralgic pains, and a uterine tumour, who received three hypodermic injections in the space of six hours of $\frac{1}{2}$ -grain morphin in each. The lessons to be drawn from these cases were that, in the first case, a practitioner had left it as hopeless before treatment was commenced. In the second case the hypodermic administration had been left in the hands of a non-professional person.

DR. JOYNT mentioned the case of a Parsee lady whom he had been called to see some years ago in Surat, in India. The lady was about seventeen or eighteen years of age, and had swallowed about an ounce of Collis's chlorodyne. Before Dr. J. saw her she had been treated by a Parsee medical graduate, who had employed all the usual remedies laid down in medical books—stomach-pump, electricity, flagellation, and artificial respiration, &c. After again in vain repeating some of these, and the comatose condition in which he found her progressing steadily, he had recourse to cold affusion, in the form of a stream of iced water slowly poured on the patient's head from a height of several feet. After a considerable time she responded to this treatment, which was carried out more or less continuously for about two hours, when she so far recovered as to be able to swallow a cup of strong coffee. Perfect recovery resulted. The poison had been swallowed about four hours before Dr. Joynt saw her.

DR. LITTLE considered that the expediency of relying on atropin as an antidote to opium-poisoning was very doubtful. It did not appear to have done good in Mr. Burgess' cases. He thought the communication most valuable as showing we should not give up any case of opium-poisoning until life was extinct. The remedies which appear to have done most good were the persistent artificial respiration and external stimulation. In a case which he had treated many years ago life was saved apparently by keeping the patient awake by slapping various parts of the body exposed for the purpose with a spatula dipped in very hot water and the use of hot coffee by enema and by the mouth. He doubted the safety of using the faradic current to the head, but found it in the case he had himself treated useful when applied to external parts as a mode of waking up the patient.

DR. HASTINGS TWEEDY said that he rose with a certain amount of diffidence to speak about a case that was admitted into Steevens' Hospital two years ago, when he was house-surgeon there. His case, unlike the other cases cited, died, though the dose taken was less than that in Mr. Burgess's case. Having heard the very instructive case of recovery he could not attribute his unsucccess to anything but to the more orthodox methods he employed in comparison to Mr. Burgess. The

stomach was washed out, ether was not injected, atropin was injected to a much larger extent than in this case. The patient was admitted at 3 o'clock in the afternoon. At Dr. Hayes' suggestion, we kept up artificial respiration until 10 o'clock the following morning. She was then breathing at the rate of 12 per minute. She continued to breathe quietly until 2 o'clock, p.m., when she suddenly died 23 hours after she was admitted.

DR. HAYES said that, having seen the patient mentioned by Dr. H. Tweedy, he was strongly of opinion that the injection of atropin distinctly benefited the patient, and he thought that it was to be regretted that in that case the artificial respiration had not been longer persevered in.

DR. WALTER SMITH remarked upon the wide limits which separate the smallest fatal dose of morphin from the maximal dose, upon which recovery has followed, the ratio being 100-1. The use of atropin in the treatment of opium-poisoning is still an undetermined question; when it appears to do good it is probably by its action as a respiratory stimulant. The state of the respiration is a better test than the condition of the pupil. It is strange how conflicting are the views as to the excretion of morphin, an important point both in toxicology and forensic medicine. It seems to be now established that morphin is mainly excreted into the stomach and bowels, and so cast out in the fæces. Very little goes out in the urine.

DR. H. T. BEWLEY said he had seen a case of morphin-poisoning in which the breathing became exceedingly shallow and feeble, and gradually became slower until the respiratory movements occurred only about four times a minute. He injected atropin several times, about $\frac{1}{30}$ grain in all, after which the breathing became better and stronger, and increased in frequency up to 6 or 7 times a minute. The patient died—in fact, she was dying of liver disease at the time she took the morphin.

DR. FINNY, alluding to the question of the antagonism of the alkaloids of morphin and atropin, referred to a communication he had made on that subject before the Medical Society of the College of Physicians some twenty years ago, in which he illustrated—and as it seemed demonstratively—the important curative antagonism of morphin in a case of atropin-poisoning, while he questioned the reliability of the treatment of opium-poisoning by the hypodermic use of atropin.

MR. BURGESS, in reply to Dr. Joynt, said he believed in cold douches, but not in a state of collapse, having often used them in milder cases of alcohol-poisoning with success. To Dr. Little—He confessed that strychnin injections did not occur to him until afterwards, but he had no doubt when the breathing became regular this would have done excellent service. To Dr. Tweedy and Dr. Hayes—The atropin was not pushed any further because—(1) It had no effect on the respiration or heart during its appli-

cation over three hours. (2) He shrank from introducing a second poison into the system when he was not deriving any benefit from the quantity already given. He was glad to find that Dr. Smith and the President agreed with his views about atropin, not being what it is represented to be, an antidote for opium.

The Section then adjourned.

MALTHUS.

IN these days of hurry, when of making of new books there is no end, nobody reads the old ones; and the views of the older authors are liable to perversion, sometimes to a ludicrous extent. None of the elders has suffered more in his reputation from such ignorance and perversion than the worthy clergyman, Malthus. In his case misrepresentation probably reached the lowest deep of absurdity in the July number of the *American Archives of Obstetrics, Gynæcology, and Pediatrics*, where its readers are gravely informed that "Thos. Robert Malthus, the scientific expounder of the principle of population conceived the idea of ligating the vas deferens in order to destroy fruitful marital relations" (p. 415). In a recent issue of the *Chicago Medical Recorder* Dr. W. H. Washburn, of Milwaukee, stimulated by horror at this audacious calumny, devotes an interesting article to an attempt to rehabilitate Malthus. He shows that the leading idea in Malthus' teaching was one which everyone admits in theory—that *no man has a moral right to marry until he is able to support a family*. As to "fruits of philosophy," ligation of vas deferens, and such like procedures, he repudiates them with disgust. In one of his works he says:—"I have never adverted to the check suggested by Condorcet without the most marked disapprobation. Indeed, I should always particularly reprobate any artificial and unnatural modes of checking population, both on account of their immorality and their tendency to remove a necessary stimulus to industry." In fact, his object was not to diminish population, but to obviate the misery and vice which excess of population over means of subsistence must inevitably produce. In replying to his critics he says they "proceed upon the very strange supposition that the ultimate object of my book is to check population, as if anything could be more desirable than the most rapid increase of population unaccompanied by vice and misery. But of course my ultimate object is to diminish vice and misery, and any checks to population which may have been suggested (moral restraint rather than the existing positive checks) are solely as a means to accomplish this end." And so: as the average number of births to a marriage are five, let no man marry unless he is in a position to maintain a wife and five children. To this Malthusian precept who will object?

SANITARY AND METEOROLOGICAL NOTES.

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VITAL STATISTICS

For four Weeks ending Saturday, February 27, 1892.

The deaths registered in each of the four weeks in the sixteen principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000:—

TOWNS	Weeks ending				TOWNS	Weeks ending			
	Feb. 6.	Feb. 13.	Feb. 20.	Feb. 27.		Feb. 6.	Feb. 13.	Feb. 20.	Feb. 27.
Armagh -	7·0	28·0	42·0	42·0	Limerick -	37·9	33·7	25·3	19·6
Belfast -	30·6	26·3	30·0	26·9	Lisburn -	8·6	12·8	21·4	21·4
Cork -	32·5	32·5	31·8	47·7	Londonderry	15·7	11·0	20·4	12·6
Drogheda	52·7	0·0	13·2	22·0	Lurgan -	31·9	27·4	31·9	22·8
Dublin -	32·7	31·5	36·4	38·4	Newry -	36·2	24·2	20·1	16·1
Dundalk -	29·3	4·2	29·3	20·9	Sligo -	56·7	30·9	36·1	30·9
Galway -	15·1	37·8	11·3	75·6	Waterford -	27·5	45·0	42·5	27·5
Kilkenny	80·2	18·9	18·9	42·5	Wexford -	49·7	36·1	22·6	40·6

In the week ending Saturday, February 6, 1892, the mortality in thirty-three large English towns, including London (in which the rate was 30·6), was equal to an average annual death-rate of 26·2 per 1,000 persons living. The average rate for eight principal towns of Scotland was 22·0 per 1,000. In Glasgow the rate was 24·7, and in Edinburgh it was 21·2.

The average annual death-rate represented by the deaths registered during the week in the sixteen principal town districts of Ireland was 32·0 per 1,000 of the population (unrevised) according to the recent Census.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 1·8 per 1,000, the rates varying from 0·0 in eight of the districts to 8·1 in Newry—the 9 deaths from all causes registered in that district comprising 2 from diarrhœa. Among the 150 deaths from all causes registered in Belfast are 3 from measles, 1 from scarlatina, 7 from whooping-cough, 1 from diphtheria, 2 from enteric fever, 1 from diarrhœa, 21 from phthisis, and 49 from diseases of the

respiratory system. The 47 deaths in Cork comprise 1 from typhus and 3 from whooping-cough. Three deaths from influenza are specially reported by the Registrar of Waterford No. 1 District, 3 by the Assistant-Registrar of Dundalk District, 1 by the Registrar of Kilkenny No. 1 District, and 4 by the Registrar of Wexford District.

In the Dublin Registration District the registered births amounted to 189—90 boys and 99 girls; and the registered deaths to 225—114 males and 111 females.

The deaths, which are 3 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 33·6 in every 1,000 of the population. Omitting the deaths (numbering 6) of persons admitted into public institutions from localities outside the district, the rate was 32·7 per 1,000. During the first five weeks of the current year the death-rate averaged 41·6, and was 8·2 over the mean rate in the corresponding period of the ten years 1882–1891.

The number of deaths from zymotic diseases registered is 32, being 6 in excess of the average for the corresponding week of the last ten years, but 10 under the number for the week ended January 30. The 32 deaths comprise 23 from influenza and its complications (a decline of 7 as compared with the number for the preceding week), 2 from whooping-cough, 1 from enteric fever, 3 from diarrhœa, and 1 from erysipelas.

Eleven cases of enteric fever were admitted to hospital, being 3 over the admissions for the preceding week. Five enteric fever patients were discharged, 1 died, and 66 remained under treatment on Saturday, being 5 over the number in hospital at the close of the preceding week.

The hospital admissions for the week include also 11 cases of measles (against 3 for the preceding week) and 3 of scarlatina, but no cases of typhus were received. Sixteen cases of measles, 7 of scarlatina, and 3 of typhus remained under treatment in hospital on Saturday.

Deaths from diseases of the respiratory system, which had fallen from 127 for the week ended January 23, to 81 for the following week, further declined to 63, but this number is 5 in excess of the average for the fifth week of the last ten years. The 63 deaths comprise 45 from bronchitis and 15 from pneumonia or inflammation of the lungs.

In the week ending Saturday, February 13, the mortality in thirty-three large English towns, including London (in which the rate was 21·6), was equal to an average annual death-rate of 23·1 per 1,000 persons living. The average rate for eight principal towns of Scotland was 20·8 per 1,000. In Glasgow the rate was 21·2, and in Edinburgh it was 15·1.

The average annual death-rate in the sixteen principal town districts of Ireland was 28·5 per 1,000 of the population (unrevised) according to the recent Census.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 2·1 per 1,000, the rates varying from 0·0 in ten of the districts to 4·5 in Wexford—the 8 deaths from all causes registered in that district comprising 1 from diphtheria. Among the 129 deaths from all causes registered in Belfast are 2 from measles, 2 from scarlatina, 7 from whooping-cough, 5 from enteric fever, 4 from diarrhœa, 21 from phthisis, and 44 from diseases of the respiratory system. The 47 deaths in Cork comprise 5 from whooping-cough, and 1 from simple continued fever. The 24 deaths in Limerick comprise 1 from whooping-cough and 1 from diarrhœa. Six deaths from influenza are specially reported by the Registrar of Waterford No. 1 District, 2 by the Registrar of Wexford District, and 1 by the Registrar of Kilkenny No. 1 District.

In the Dublin Registration District the registered births amounted to 230—130 boys and 100 girls; and the registered deaths to 213—96 males and 117 females.

The deaths, which are 1 under the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 31·8 in every 1,000 of the population. Omitting the deaths (numbering 2) of persons admitted into public institutions from localities outside the district, the rate was 31·5 per 1,000. During the first six weeks of the current year the death-rate averaged 40·0, and was 6·8 over the mean rate in the corresponding period of the ten years 1882–1891.

Deaths from zymotic diseases, which had fallen from 42 for the week ended January 30, to 32 for the following week, further declined to 19, or 4 under the average for the corresponding week of the last ten years. The 19 deaths comprise 1 from measles, 12 from influenza (being 11 under the number of deaths from that disease for the preceding week), 3 from whooping-cough, 1 from enteric fever, and 1 from diarrhœa.

Eleven cases of enteric fever were admitted to hospital, being equal to the number of admissions for the preceding week. Seven enteric fever patients were discharged, and 70 remained under treatment on Saturday, being 4 over the number in hospital at the close of the preceding week.

The hospital admissions include also 5 cases of measles (being 6 under the number of cases of that disease admitted during the preceding week), and 1 case of typhus, but no cases of scarlatina were received. Nineteen cases of measles, 4 of typhus, and 5 of scarlatina remained under treatment in hospital on Saturday.

Diseases of the respiratory system caused 63 deaths, being equal to the number for the preceding week and 10 in excess of the average for the sixth week of the last ten years. The 63 deaths comprise 42 from bronchitis and 14 from pneumonia or inflammation of the lungs.

In the week ending Saturday, February 20, the mortality in thirty-three large English towns, including London (in which the rate was 20·7), was equal to an average annual death-rate of 21·1 per 1,000 persons living. The average rate for eight principal towns of Scotland was 20·1 per 1,000. In Glasgow the rate was 21·5, and in Edinburgh it was 17·1.

The average annual death-rate represented by the deaths registered in the sixteen principal town districts of Ireland was 31·6 per 1,000 of the unrevised population based on the Census of 1891.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 1·6 per 1,000, the rates varying from 0·0 in eleven of the districts to 10·3 in Sligo—the 7 deaths from all causes registered in that district comprising 2 from diarrhœa. Among the 147 deaths from all causes registered in Belfast are 1 from measles, 6 from whooping-cough, 1 from enteric fever, 4 from diarrhœa, 33 from phthisis, and 33 from diseases of the respiratory system. The Registrar of Waterford No. 1 District specially reports one death from influenza.

In the Dublin Registration District the registered births amounted to 135—74 boys and 61 girls; and the registered deaths to 251—137 males and 114 females.

The deaths, which are 32 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 37·4 in every 1,000 of the population. Omitting the deaths (numbering 7) of persons admitted into public institutions from localities outside the district, the rate was 36·4 per 1,000. During the first seven weeks of the current year the death-rate averaged 39·6, and was 6·5 over the mean rate in the corresponding period of the ten years 1882–1891.

Thirty-two deaths from zymotic diseases were registered, being 9 in excess of the average for the corresponding week of the last ten years, and 13 over the number for the week ended February 13. They comprise 3 from measles, 2 from scarlet fever (scarlatina), 17 from influenza (being 5 over the number of deaths from that disease for the preceding week, but 6 under the number for the week ended February 6), 3 from whooping-cough, 1 from enteric fever, 3 from diarrhœa, and 1 from dysentery.

Only 5 cases of enteric fever were admitted to hospital, being 6 under the number of admissions for each of the two weeks preceding. Thirteen enteric fever patients were discharged, and 62 remained under treatment on Saturday, being 8 under the number in hospital on Saturday, February 13.

Four cases of measles and 2 of scarlatina were admitted to hospital, but no cases of typhus were received. Twenty-one cases of measles, 6 of scarlatina, and 4 of typhus remained under treatment in hospital on Saturday.

The number of deaths from diseases of the respiratory system registered is 61, being 3 over the average for the corresponding week of the last ten years, but 2 under the number for the week ended February 13. The 61 deaths comprise 36 from bronchitis, 10 from pneumonia or inflammation of the lungs, 4 from croup, and 1 from pleurisy.

In the week ending Saturday, February 27, the mortality in thirty-three large English towns, including London (in which the rate was 22·4), was equal to an average annual death-rate of 23·4 per 1,000 persons living. The average rate for eight principal towns of Scotland was 22·8 per 1,000. In Glasgow the rate was 24·9, and in Edinburgh it was 18·7.

The average annual death-rate in the sixteen principal town districts of Ireland was 33·3 per 1,000 of the population (unrevised) according to the recent Census.

The deaths from the principal zymotic diseases registered in the sixteen districts were equal to an annual rate of 2·5 per 1,000, the rates varying from 0·0 in ten of the districts to 5·2 in Sligo—the 6 deaths from all causes registered in that district comprising 1 from diarrhœa. Among the 132 deaths from all causes registered in Belfast are 1 from measles, 1 from typhus, 5 from whooping-cough, 1 from diphtheria, 1 from simple continued fever, 2 from enteric fever, 3 from diarrhœa, 21 from phthisis, and 90 from diseases of the respiratory system. The 69 deaths in Cork comprise 1 from typhus, 5 from whooping-cough, 1 from diarrhœa, 12 from phthisis, and 18 from diseases of the respiratory system. The Registrar of Waterford No. 1 District specially reports 2 deaths from influenza.

In the Dublin Registration District the registered births amounted to 197—103 boys and 94 girls; and the registered deaths to 265—120 males and 145 females.

The deaths, which are 53 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 39·5 in every 1,000 of the population. Omitting the deaths (numbering 7) of persons admitted into public institutions from localities outside the district, the rate was 38·5 per 1,000. During the first eight weeks of the current year the death-rate averaged 39·6, and was 6·6 over the mean rate in the corresponding period of the ten years 1882–1891.

Thirty-four deaths from zymotic diseases were registered, being 2 over the number for the preceding week and 11 in excess of the average for the eighth week of the last ten years. The 34 deaths comprise 3 from measles, 2 from scarlet fever (scarlatina), 1 from typhus, 6 from influenza (being a decline of 11 as compared with the number for the preceding week), 8 from whooping-cough, 2 from simple continued and ill-defined fever, 4 from enteric fever, and 2 from diarrhœa. Five of the 8 deaths

from whooping-cough occurred in No. 2 North City—Lisburn-street—District.

Sixteen cases of enteric fever were admitted to hospital, being 11 in excess of the admissions for the preceding week and 5 over the number for the week ended February 13. Twelve enteric fever patients were discharged, 1 died, and 65 remained under treatment on Saturday, being 3 over the number in hospital at the close of the preceding week.

The hospital admissions for the week include, also, 10 cases of measles and 1 case of scarlatina, but no cases of typhus were received. Twenty-two cases of measles, 5 of scarlatina, and 1 of typhus remained under treatment in hospital on Saturday.

Deaths from diseases of the respiratory system amount to 65, being 4 over the number for the preceding week and 9 in excess of the average for the eighth week of the last ten years. They comprise 52 from bronchitis and 11 from pneumonia or inflammation of the lungs.

METEOROLOGY.

Abstract of Observations made in the City of Dublin, Lat. 53° 20' N., Long. 6° 15' W., for the Month of February, 1892.

Mean Height of Barometer,	-	-	-	29.787 inches.
Maximal Height of Barometer (on 13th, at 9 a.m.),				30.666 „
Minimal Height of Barometer (on 20th, at midnight)				29.136 „
Mean Dry-bulb Temperature,	-	-	-	40.8°.
Mean Wet-bulb Temperature,	-	-	-	39.1°.
Mean Dew-point Temperature,	-	-	-	36.5°.
Mean Elastic Force (Tension) of Aqueous Vapour,	-			.221 inch.
Mean Humidity,	-	-	-	85.0 per cent.
Highest Temperature in Shade (on 7th)	-	-	-	54.6°.
Lowest Temperature in Shade (on 17th),	-	-	-	26.1°.
Lowest Temperature on Grass (Radiation) (on 17th),				21.1°.
Mean Amount of Cloud,	-	-	-	68.5 per cent.
Rainfall (on 19 days),	-	-	-	2.119 inches.
Greatest Daily Rainfall (on 20th),	-	-	-	.531 inch.
General Directions of Wind,	-	-	-	W., E.

Remarks.

No greater contrast could there be than between the weather of February, 1892, and that of February, 1891, which proved a record month for drought, mildness, calm, and foginess combined.

The month now under review was, on the contrary, wet, cold, stormy, and cloudy. Rain or snow fell in measurable quantity on 19 out of 29 days, and on as many as 10 days the wind reached the force of a gale in Dublin. Had it not been for a mild period from the 6th to the 12th, February, 1892, would have proved one of the coldest on record.

In Dublin the mean temperature (41.3°) was 1.5° below the average (42.8°); the mean dry bulb readings at 9 a.m. and 9 p.m. were 40.8° . In the twenty-seven years ending with 1891, February was coldest in 1873 (M. T. = 37.9°), and warmest in 1869 (M. T. = 46.7°). In 1886 the M. T. was 39.7° . In the year 1879 (the "cold year") it was 40.1° . In 1888 it was as low as 38.6° ; in 1889 it was 40.3° ; in 1890 it was 41.5° ; and in 1891 it was as high as 44.7° .

The mean height of the barometer was 29.787 inches, or 0.068 inch below the average value for February—namely, 29.855 inches, and .611 inch below the mean pressure in February, 1891. The mercury rose to 30.666 inches at 9 a.m. of the 13th, and fell to 29.136 inches at midnight of the 20th. The observed range of atmospherical pressure was, therefore, 1.530 inches—that is, a little over an inch and a half.

The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 40.8° , or 2.3° above the value for January, 1892. Using the formula, *Mean Temp.* = *Min.* + (*max—min.* $\times .50$), the M. T. becomes 41.3° , compared with a twenty-five years' average of 42.8° . On the 7th the thermometer in the screen rose to 54.6° —wind, W.; on the 17th the temperature fell to 26.1° —wind, W.S.W. The minimum on the grass was 21.1° on the 17th.

The rainfall was 2.119 inches, distributed over 19 days. The average rainfall for February in the twenty-five years, 1865–89, inclusive, was 2.150 inches, and the average number of rainy days was 17.2. The rainfall, therefore, was slightly below the average, while the rainy days were above it. In 1883 the rainfall in February was large—3.752 inches on 17 days; in 1879, also, 3.706 inches fell on 23 days. On the other hand, in 1873, only .925 of an inch was measured on but 8 days; in 1890, only .802 of an inch fell on but 7 days; and in 1887 only .541 of an inch fell on 11 days. The rainfall in 1887 was much the smallest recorded in February for very many years. But the record for 1891 is probably unparalleled—.042 inch on 2 days. The nearest approach to this drought was in September, 1865, when only .056 of an inch of rain was measured on but 3 days.

There was no snow, sleet, or hail in Dublin in February, 1891, but in the present month snow or sleet fell on 8 days—the 1st, 2nd, 15th, 16th, 17th, 18th, 19th, and 20th; while hail was observed on 5 days—the 15th, 16th, 18th, 21st, and 29th.

The atmosphere was foggy on 6 days—namely, the 4th, 6th, 9th, 25th, 26th, and 27th. The amount of cloud—68.5 per cent.—was in excess of the average—66 per cent. High winds were noted on 14 days, reaching the force of a gale on no less than 10 occasions—namely, the 1st, 2nd, 7th, 8th, 15th, 16th, 19th, 20th, 21st, and 23rd.

The temperature exceeded 50° in the screen on 6 days, compared with 6 days in January, and as many as 14 days in February, 1891; while it

fell to or below 32° in the screen on 5 days, compared with 15 days in January, and with 2 in February, 1891. The minima on the grass were 32° , or less, on 16 nights, compared with 25 nights in January, and 17 nights in February, 1891. On 6 days the thermometer failed to rise above 40° in the screen.

Very changeable weather prevailed throughout the period ended Saturday, the 6th. Large depressions passed eastwards or northeastwards across Scotland, the Norwegian Sea, and Scandinavia, causing frequent showers, storms, and sudden changes of temperature. The most serious and deepest of these depressions was observed on the evening of Monday, the 1st, when the barometer sank to 28.02 inches by 6 p.m. at Sumburgh Head in the Shetlands. In Dublin Monday broke during the prevalence of a gale from S.W. to W. On this day the weather turned much colder and falls of snow occurred during the ensuing night. Tuesday and Wednesday were cold, but chiefly fine and dry. Thursday was dull, with rain at times—in the evening the sky cleared. Friday was a fine day. Saturday proved dull, damp, foggy, mild, and rainy. A near conjunction of the Moon, Jupiter, and Venus in the southwestern sky was well observed on Monday evening, and on Friday the planets Jupiter and Venus were seen quite close together after dusk. In Dublin the barometer fell to 29.150 inches at 3 p.m. of Tuesday (wind, W.). On Monday the thermometer rose to 50.8° in the shade; on Tuesday it fell to 33.0° . The rainfall was .242 inch on four days—.121 inch being measured on Monday. The prevailing winds were W. and S.W.

Very dull mild weather prevailed after Monday, the 8th, to the close of the week ended Saturday, the 13th. On Sunday a depression crossed Scotland in an easterly direction, causing fresh or strong westerly winds, and rain at many stations. A secondary disturbance followed at night, being heralded by lunar halos and accompanied by a gale and heavy rain early on Monday morning. The weather then cleared and remained fair and cool until 6 a.m. of Tuesday, when foggy, damp, cloudy weather set in. An anticyclone was at this time found over the S. of Ireland, the S.W. of England, and Brittany, as well as over the Atlantic to the southward of the British Islands. This high pressure system daily increased in intensity, until on Saturday morning the barometer stood as high as 30.67 inches in Dublin, 30.70 inches at Valentia Island, and 30.73 inches at Belmullet. On Thursday night the sky cleared over the S.E. of England, where temperature consequently fell fast, so that frost occurred on Friday morning. A similar clearing of the sky took place in Dublin at midnight of Friday, resulting in a rapid decrease of temperature for the time being. By 8 a.m. of Saturday, however, the sky had again become overcast. In Dublin the mean atmospheric pressure was 30.341 inches, or more than three-quarters of an inch above the value for the previous week (29.566 inches). The barometer fell to

29·730 inches at 4 p.m. of Sunday (wind, W.), and rose to 30·666 inches at 9 a.m. of Saturday (wind, N.N.W.). The mean temperature was $46\cdot5^{\circ}$, the mean dry bulb temperature at 9 a.m. and 9 p.m. being $46\cdot3^{\circ}$. The thermometers in the screen rose to $54\cdot6^{\circ}$ on Sunday and fell to $38\cdot9^{\circ}$ on Saturday. The rainfall was ·333 inch on three days, ·310 inch being referred to Sunday. The prevailing winds were W. and N.W. The percentage of cloud during the week was 75.

It is not often that, even in the variable climate of the British Islands, so complete a *volte-face* occurs in the weather of two consecutive weeks as that which we have now to chronicle. The week ending the 13th was dull, mild, and genial, with moderate westerly winds: the week now under review was inclement, cold, and stormy, with frequent falls of snow and hail, and a prevalence of piercing, dry easterly winds. The change began early on Sunday morning with a rapid decrease of both pressure and temperature as an extensive depression advanced from the northward, passing in a southerly direction across Great Britain. A heavy shower of cold rain fell in Dublin at 3 30 p.m. of Sunday, the 14th, after which the sky cleared with ever-increasing cold. Snow, sleet, and hail fell on Monday, when the wind shifted to E., and finally rose to a gale. A new disturbance on Wednesday caused a temporary shift of wind to W., and a fall of snow, followed by a thaw. Next day the wind returned to the eastward and snow and hail fell in abundance. On Friday and Saturday a severe easterly gale prevailed with heavy snow-storms. At first the air was unusually dry, the relative humidity falling to 55 per cent. at 9 a.m. of Friday. Afterwards the air became damp and raw, with a gradual thaw on Saturday. The cold in central England was at times very intense—at Loughborough, in Leicestershire, the thermometer in the screen fell to 0° (zero) on Wednesday and to 4° on Friday, when the minimum at York also was 7° . On this day the unusually low reading -2° was recorded at Braemar in Scotland and Newton Reigny in Cumberland. In Dublin the mean pressure was 29·526 inches, the barometer ranging between 30·193 inches at 9 a.m. of Sunday (wind, W.) and 29·136 inches at midnight of Saturday (wind, E.). The corrected mean temperature was $35\cdot1^{\circ}$. The mean dry bulb temperature at 9 a.m. and 9 p.m. was $34\cdot6^{\circ}$. The screened thermometers rose to $48\cdot6^{\circ}$ on Sunday and fell to $26\cdot1^{\circ}$ on Wednesday. The rainfall consisted chiefly of snow and hail. It amounted to ·937 inch on 7 days. The heaviest fall was ·531 inch on Saturday. The prevailing winds were W.N.W. and E.N.E.

During the week ended Saturday, the 27th, the weather was for the most part dull, rainy, and cold, with persistent south-easterly winds and cloudy skies. A large anticyclone was found throughout over eastern and northern Europe, while a deep depression passed slowly away to sea from the S.W. of Ireland, to which locality it had advanced from the

southward on Saturday, the 20th. At 8 a.m. of Sunday, the 21st, the barometer was as low as 28·89 inches at Valentia Island in Kerry, or exactly one inch lower than the reading in the Shetlands at the same time. During the previous night a whole gale to a storm from the eastward had been experienced in Ireland, where snow, sleet, and rain fell in large quantities. While the depression in the S.W. was gradually "filling up" and moving away over the Atlantic, the weather remained dull and wet, with strong and squally S.E. winds. On Friday atmospheric pressure became uniform over Ireland, where the sky cleared temporarily and the thermometer fell fast. Saturday proved gloomy and cold with a freshening easterly to north-easterly wind. In Dublin the mean height of the barometer was 29·671 inches, pressure increasing from 29·188 inches at 9 a.m. of Sunday (wind, S.E.) to 30·119 inches at 9 a.m. of Saturday (wind, E. by N.). The mean temperature was 42·2°. The mean dry bulb readings at 9 a.m. and 9 p.m. were 42·4°. The screened thermometers rose to 47·7° on Friday and fell to 33·8° early on Saturday. The rainfall amounted to ·605 inch on five days. Of this quantity ·153 inch was measured on Tuesday. Thunder and lightning were rather prevalent in the south. The wind was constantly S.S.E. or S.E. until Saturday, when it backed to E.N.E.

The last two days of the month were cold, changeable, and for the most part dull. A shower of hail fell on the afternoon of the 29th.

In Dublin the rainfall up to February 29, 1892, has amounted to 3·817 inches on 39 days, compared with ·714 inch on 16 days in the same period in 1891, and a twenty-five years' (1865-1889) average of 4·350 inches on 34·5 days.

At Knockdolian, Greystones, Co. Wicklow, 2·165 inches of rain fell in February, on 16 days; and only 1·045 inches in January, on 15 days. The total fall to February 29th inclusive has been 3·210 inches, on 31 days.

LEAD-POISONING IN NEW SOUTH WALES.

IN a recent issue of the *Australasian Medical Gazette* there is an amusing case of "lead"-poisoning, gravely reported and justly called a "remarkable case." The reporter's daughter "accidentally fell when running, and broke the point of a black lead pencil in the back part of her hand." A "bit of lead (about 2 grains)" remained imbedded for six or seven weeks, and produced optic neuritis until removed. The doctor had "often attended patients suffering from lead-colic, but the symptoms in the present case were somewhat of a different character." The most remarkable thing about the case is that the editor prints it in full, with its title, "Remarkable Case of Lead-Poisoning," contenting himself with a mild note "reminding" the writer that plumbago contains no lead!

PERISCOPE.

CLINICAL AND THERAPEUTIC NOTES ON INFLUENZA.

DR. C. R. ILLINGWORTH, of Clayton-le-Moors, writes under date of March 5, 1892:—"The incubation period of the disease is exactly three days. I recognise two types—the pulmonary, with marked chest mischief, and the peripheral, with great bodily pain but slight chest mischief. The curative agents are germicidal and febrifuge or antipyretic. The particular agents employed depend upon the predominant inflammation; but I maintain that the indications are the same in all. They are—firstly, to diminish the excess of fibrin in the blood; and, secondly, to lessen the excited action of the heart and blood-vessels: thus at once relieving the tension and pain caused by the blood-stasis of inflammation, and lowering the temperature by diminishing heart-work. Complete testimony has been forthcoming from the profession as to the value in the treatment of influenza of drugs possessing these valuable properties. Thus, amongst antifibrinating agents there are, in order of potency, antipyrin and its congeners, the salicylates, iodides, acetates, carbonates, and nitrates of ammonia, soda, and potash, &c., all of which have been successfully prescribed, either singly or in combination with the cardiac depressants, aconite, digitalis, and ipecacuan. At the same time, simple but nourishing food has been ordered at regular intervals, and—contrary to the popular notion—the avoidance at first of alcohol, for obvious reasons. Amongst germicidal agents, eucalyptus, carbolic acid, mercury biniodide, &c., have been used successfully, some as inhaled vapours and others as internal medicaments. In the pulmonary, which is the prevalent and fatal type, treatment with nitrous ether, ipecacuan, iron, and 2-minim doses of opium (as a sedative), and the constant use of some microbicide vapour, has answered excellently. Antipyrin and all other fluidising drugs are dangerous in this form. In the peripheral forms, a combination of acetate of ammonia, 2-grain doses of antifebrin, from 2 to 5-minim doses of aconite, and half-drachm doses of solution of mercury biniodide, given every two hours, acts very rapidly in aborting the disease in from 10 to 18 hours. For the slight remaining cough, sulphuric acid, opium, and carbolic acid suffice. But, although all inflammatory disorders are characterised by excessive fibrination of the blood, there are two causes in influenza which inevitably lead to an opposite state of the vital fluid; and it is in reference to this defibrination that special precautions should be taken in treatment. The first is one which operates in all specific febrile disorders—the depredations by micro-

organisms upon the fibrin-elements of the blood, in some cases so extensive as to cause malignancy and rapid death; and the other, common to all pulmonary inflammatory disorders, the mechanical interference with the oxygenation of the blood by intense congestion and increased phlegm-secretion. The symptoms of this condition are a dusky hue of the skin, weak and fluttering pulse, laboured breathing, loud râles, and abundant watery phlegm. When this condition threatens, all antifibrinating agents should at once be stopped, and 5-minim doses of the strong perchloride of iron given every two hours, to astringe and give fibrin to the blood, and tone to the heart, blood, and nerves for the prevention of further effusion into the bronchial tract. Alcohol is also clearly indicated in full doses, at stated intervals, but no sedative should be prescribed. With the knowledge, therefore, that iron is compatible with the other ingredients of the mixture, I prescribe it in all pulmonary cases of influenza from the first, and thus either entirely prevent or very greatly modify this dangerous and fatal effusion, with the result that instead of having such cases down for twelve or fourteen days, I cut the attack short in four or five. In those cases of the disease in which great cardiac debility with asthmatic tendencies are evidenced, I give 6-minim doses of belladonna, with the iron, and at the same time omit the ipecacuan, as a cardiac depressant of any kind increases the mischief. A valuable tonic for the consequent debility I have always found in the time-honoured mixture of hydrochloric acid, chlorate of potash, and steel. *Remarks:—*The potency of the biniodide as a germicide is indisputable, but its powers are marvellously enhanced by its ready solubility in so diffusible an agent as sodic iodide, a salt the chief characteristic of which is its fibrin-solvent power. Hence the rapidity of the curative action of Hg. I_2 in hay asthma, and in the local manifestations of syphilis, scarlet fever, diphtheria, &c."

THE ELEVENTH INTERNATIONAL MEDICAL CONGRESS, ROME, 1893.

At the closing meeting of the Tenth International Medical Congress, held at Berlin in 1890, Rome was selected as the seat of the Congress in 1893, and Rudolph Virchow resigned the presidency to Prof. Guido Baccelli. The Presidents of the Medical Faculties, of the Universities, and of the Scientific Institutions of Italy, together with the most prominent Italian physicians and surgeons, have met in Rome in order to make arrangements for the coming Eleventh International Medical Congress. Professor Guido Baccelli has been nominated President-General; Prof. Edoardo Maragliano, clinical physician in Genoa, has been elected Secretary-General; Comm. Prof. Pagliani, Director-General for Public Health in Italy, Treasurer; and Comm. Ferrando, Chief of the Department of the Minister of Public Instruction, Manager. At the same time, executive committees were elected by ballot for the 14 sections, corresponding

with the following division of the scientific work of the Congress:— I. Anatomy; II. Physiology; III. Clinical Medicine; IV. Gynæcology; V. General Pathology and Pathological Anatomy; VI. Pharmacy; VII. Surgery and Orthopædies; VIII. Psychiatry and Neuropathology; IX. Ophthalmology; X. Dermosyphilopathy; XI. Legal Medicine; XII. Hygiene; XIII. Laryngology and Otology; XIV. Military Medicine and Surgery. The Central Committee has recently elected foreign Committees for the purpose of inviting every nation in the world to take part in the Congress, so that it may prove worthy of its predecessors and also of Rome. The time, so far, chosen for the convocation of the Congress is the month of September, a period when very fine and splendid weather adds to the many fascinating attractions of the Italian capital. All the preparations proceed with promptness and give assurance of a great and unqualified success. Letters on the business of the Congress should be addressed to the Secretary-General, Professor E. Maragliano, Istituto di Clinica Medica, Ospedale Pammatone, Genoa, Italy.

THE LOCAL GOVERNMENT (IRELAND) BILL, 1892.

IN considering the provisions of this Bill which immediately affect the medical profession, and leaving out other questions, we find that Clause 10 provides for the transfer to the county councils of the powers of the present boards of poor-law guardians, acting as the local authority, in regard to the Contagious Diseases (Animals) Acts, 1878 to 1890, and the Destructive Insects Act, 1877. Again, Clause 12 enables the county councils to take over the powers of boards of guardians acting as rural sanitary authorities under the following very important measures: The Public Health (Ireland) Act, 1878; the Housing of the Working Classes Act, 1890; the Labourers (Ireland) Acts, 1883 to 1886; the Factory and Workshop Act, 1891; and the Acts amending any of these measures, as well as any other Act conferring powers and duties on rural sanitary authorities as such. For the carrying out of the business so transferred, any county council may divide their county into such "sanitary districts" as (with the approval of the Local Government Board) they may think suitable; and they may delegate the sanitary administration of such a district to a "sanitary committee" composed of county councillors and councillors of the baronies comprised wholly or in part in the district. The county council may appoint officers under the sanitary Acts either for the whole county or for any part of the same. This provision, of course, includes the appointment of medical officers of health, and we may here express the hope that advantage will be taken of it to put a stop to the present system of appointing a consulting sanitary officer at a wretchedly inadequate salary for every poor-law union, which is the existing unit of a rural sanitary district in Ireland under the Public Health Act of 1878 (see Section 6 of that Act). There

is no reason why, under Clause 12, a medical officer of health at a good salary should not be appointed for an entire county. We would go further, and suggest that the clause should be amended so as to allow several county councils to unite in appointing a first-class specialist as medical officer of health at a salary which would render him independent in the fullest sense of the term. Unfortunately, this Clause 12 is permissive, not compulsory—at least it is not until the councils of not less than three-fourths in number of all the counties in Ireland have adopted the clause that the Lord Lieutenant may, by an Order in Council, direct that it shall have effect in the remaining counties. We are at a loss to understand in what relation the dispensary medical officers—who, under Section 11 of the Public Health (Ireland) Act, 1878, are medical officers of health for their several districts—will stand to the Bill now before us. They are appointed by their respective dispensary committees, subject to the approval of the several boards of poor-law guardians, and will, therefore, owe no allegiance to the county councils or the sanitary committees appointed by the latter. In our opinion, it would be well to supersede the existing by a brand-new sanitary organisation. So far as its medical aspect is concerned, the present sanitary organisation in Ireland has signally failed, mainly from two causes—first, want of independent supervision; and, secondly, inadequate remuneration. The Act of 1878 by Section 11 gives only a permissive power to the Local Government Board to provide independent supervision, and naturally this power in consequence has not been exercised. Again, the remuneration allowed to medical officers of health by the various sanitary authorities under the sanction of the Local Government Board is—except in a very few instances—so shamefully inadequate that the only possible result is practically to render the Act a dead letter so far as medical inspection or advice is concerned. Let us look a little more closely into these two points—supervision and remuneration. Anyone who will consider the relations existing between the district medical officers of health and the district sanitary authorities will scarcely deny the expediency—nay, the necessity, of providing independent supervision. Representations on this subject were repeatedly made to the Government at the time of the passing of the Public Health Act in 1878, but the stereotyped official answer invariably was that independent supervision was a matter for administration, and not one requiring legislation. Be this as it may, at present no such thing as independent supervision exists in Ireland, except perhaps in Dublin and Belfast. On the contrary, the sanitary authorities have been satisfied with appointing a nondescript class of officials called “consulting sanitary officers.” These gentlemen are generally the work-house medical officers, directly dependent on the boards of guardians who appoint and pay them. “Pay them!” Hear the Report of the Royal Commission on Local Government and Taxation of Towns in Ireland (1877)

on this point:—"In name there is generally a consulting sanitary officer, at a ludicrously small salary, but he is rarely consulted, and, except at Belfast, it is a perfect misnomer." Another burning question is that of the remuneration to be awarded to the medical sanitary staff of the country. Immediately on the passing of the Public Health Act of 1874, the Local Government Board for Ireland sent a general order to the sanitary authorities throughout the country to the effect that the salaries paid to the "sanitary officers" (medical officers of health) should not exceed one-fourth of the amount of their salaries as dispensary medical officers. By this extraordinary order it is needless to say that the prospects of effective sanitation in Ireland were virtually ruined for the time being. It is true that, owing to strong remonstrances made to the Government, the objectionable provision by which a maximal scale of remuneration was fixed for the services of the medical officers of health was withdrawn when the Act of 1878 became law. But it is equally true that no serious attempt has been made in accordance with the spirit of that Act to terminate the grievance in regard to salary under which the district medical officers of health had previously laboured. It seems to us that the present is a favourable opportunity to remodel the whole sanitary organisation of Ireland, and that clauses for that purpose should be introduced into the Local Government Bill now under review. Certain it is that, if the Bill passes in its present form, confusion will be rendered worse confounded as regards sanitary matters. In Clause 52 an invidious distinction is drawn between the county surveyor and the medical officer of health—the former officer cannot be dismissed by the county council, who may "remove at their pleasure" the medical officer of health and other officers. Sections 214 and 215 of the Public Health (Ireland) Act, 1878, which relate to the making of provisional orders by the Local Government Board, are to apply for the purposes of the Local Government Bill, as if re-enacted in it, and in terms made applicable thereto. Similarly, Sections 209, 210, 212, and 213 of the same Act, relating to the holding of local inquiries by the Local Government Board, are to be re-enacted and incorporated in the Bill. Apart from the clauses which bear upon the sanitary administration of the country, those which confer new powers upon the county council possess great interest for the medical profession. We allude particularly to Clause 15, which confers upon the county council the right to appoint at least one-half of the governors or directors of the district lunatic asylum; Clause 16, which vests in the county council the right of appointing annually five governors of any county infirmary or hospital to which a contribution is made out of county cess—such governors to be members of the body corporate of the infirmary or hospital in question; and Clause 17, which transfers from the Parliamentary electors to the county council the right of appointing a coroner for the county or any district in it. The fore-

going analysis of some of the important provisions of this Bill will show how closely its passage through Parliament will require to be watched if the interests of the medical profession are to be efficiently safeguarded.—*British Medical Journal*.

CLINIQUE FRANCAISE.

WE have received the programme of the Clinique Française, the Paris School of Medico-Chirurgical Practice. The object of the institution is "to group in one spot, open all the year round, the various general and special hospital clinics, so as to facilitate for students and for practitioners the rapid study (primary, or by way of repetition) of the actual practice of the healing art." Hitherto it has been almost impossible for either French students or foreign visitors to obtain opportunities of manipulating the instruments and apparatus indispensable for the diagnosis and treatment of diseases of the eye, the nose, the ear, the mouth, the larynx, the urinary passages, &c. In order to study nervous diseases, skin diseases, syphilis, diseases of children, orthopædics, general surgery, anæsthesia, gynæcology, biological chemistry, bacteriology, it was necessary to visit twenty hospitals or dispensaries, one after the other, while certain branches of medical science were not taught anywhere—such as massage, hydrotherapy, electrotherapy, vaccination, hypodermic injection. To obviate these difficulties the school was established. Each of the subjects enumerated above is taught in a special, theoretical, and practical two-months course of lectures, and, independently of these, the authors of new discoveries in any of these subjects deliver special addresses. The programme before us gives the syllabus of each course. The classes appear to be absolutely free to all.

DEATH-RATE IN RUSSIA.

THE *Cincinnati Medical News* states that mortality is much higher in Russia than in other countries. Of 1,400,000 male children born in 1855, within twenty-one years (in 1876—time of the conscription) 610,000, or 43 per 100 only, were found living. Among 1,512,202 boys born in 1862, in 1882 (time of the conscription) 777,769, or 51 per 100, were found living. Among 382,109 called in 1884, 71,607 men, or 19 per 100, were found, after medical examination, incapable for military service. The military incapacity is in most cases determined (in 32.9 per 100 cases) by affection of the bones, articulations, and muscles.

SPIRIT-DRINKING ON THE CONTINENT.

THE *Journal of the American Medical Association* gives some figures inconsistent with popular beliefs as to the consumption of spirits in some of the continental States. In the German Empire, for instance, commonly supposed to be addicted to beer-drinking, less than half a pint a day is consumed

for each individual of the population, while in the absorption of spirits it ranks third of European States. Denmark consumes 20 litres a head per annum, Russia 12, Germany 11. In France the consumption of spirits is steadily and rapidly increasing. In the department of Lower Seine it amounted in 1890 to 3 gallons per head.

MEDICINE IN PUEBLA.

WE are glad to see that Puebla, a city of 90,000 inhabitants, is able to start, and, we trust, to maintain, a medical periodical of its own; and we welcome our infant contemporary, the *Boletín Medico de Puebla*. It is a monthly journal; annual subscription, one dollar, each number containing twelve large pages. There is a powerful staff of editors, amongst them two Drs. O'farrill—a name which looks familiar. We notice that in the first quarter of 1891, 662 deaths were registered—a mortality of 2·68 per mille per mensem, but, as only one death is attributed to parturition, it is to be feared that registration is not absolutely perfect. By far the largest number of deaths in that quarter are attributed to pneumonia, 58 to eclampsia, and 48 to various forms of enteritis, 29 to small-pox, 15 to typhus.

PRESERVATIVE FOR STEEL PENS.

How to keep your favourite pen from rusting is one of the most desirable of secrets; and if our contemporary, the *Répertoire de Pharmacie*, is correct, it is a very simple matter. After, like ourselves, trying a number of remedies, the end desired was found by sticking the point of the pen into a raw potato. [We are inclined to think that the idea was borrowed from Ireland, for we remember seeing the familiar “Murphy” acting as a penwiper for some of our readers.—ED.]

L'UNIVERS MÉDICALE

Is a comparatively recent addition to the ever-increasing list of medical periodicals. It is issued monthly in Paris, edited by Dr. E. Sereno, and devoted to “diseases of women and medical electricity.” It gives 20 octavo pages for fourpence sterling. The number before us contains the continuation of an elaborate paper by the editor on the differential diagnosis of uterine tumours. The purely electrical information is rather elementary; but we have an alphabetical list—from *accouchement* to *vomissements*—of 108 morbid conditions for which electricity is the cure. Within the limits self-imposed the contents are varied.

THE CHICAGO MEDICAL RECORDER.

THIS monthly is the Journal of the Chicago Medical Society. The number now before us (Nov. 1891) contains 106 octavo pages, well printed on excellent paper, price one shilling. Eighty pages are taken

up with the proceedings of the Medical and other societies, 3 pages with reviews, and 70 with original contributions of which there are ten, including a Presidential Address. It is significant that five of the ten papers are devoted more or less directly to typhoid fever, which appears to be endemic in Chicago. We observe in the Health Office Report for October, that in a population of 1,200,000, 171 deaths were due to this disease—nearly 9 per cent. The total mortality for the month was 1,010—"15.85 per thousand of population October, 1890," but "19.10 per thousand of population." The other principal causes of death were phthisis, 160; violence, 162; diphtheria, 124; pneumonia, 112; scarlatina, 43; suicide, 33. 780 children under five died.

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

Ready-made Poultices.

MESSRS. SACKLINS and Co., of 20 Royal Exchange, London, have patented ingeniously-designed linseed and mustard poultices, which cannot fail to supply the want long felt for a serviceable and cleanly poultice.

Both the linseed and the mustard poultices have waterproof backs and muslin faces. They are prepared of two sizes—the smaller, $7\frac{1}{2}$ inches square, has four sections; the larger, 23 inches by $7\frac{1}{2}$, has twelve similar sections. These poultices may be used whole, or they may be divided into portions of the required size by cutting between the close parallel seams which separate the sections from each other.

The linseed poultice is a real poultice of pure crushed linseed said to be rendered aseptic. These poultices are ready for immediate use and merely require soaking with boiling water poured from a kettle. When applied to unbroken skin (as in chest affections) they may be re-dipped in boiling water and used fifteen or twenty times consecutively, they will thus be found 60 to 80 per cent. less costly than poultices as ordinarily made. They are prepared with about one-tenth of the trouble, and are much more cleanly and effective.

The mustard poultice is made of pure brown mustard flour, and ground mustard husk which contains a bland soothing oil. These poultices require moistening with warm water and can be worn for hours by adults. Delicate invalids and children can wear them long enough to derive full benefit from using them, and it is obvious that the benefit derived from a prolonged application of these comfortable mustard poultices is much greater than is the case with home-made blisters or mustard leaves that are most frequently rejected by the patient before any appreciable advantage has been gained by using them.

The poultices cost sixpence, or one shilling and sixpence each, according to size.

Autometric Stopper.

In the number of this Journal for June, 1888 (Vol. LXXXV., No. 198, third Series, page 560), we noticed with approval a process for the extemporaneous production of decoctions, infusions, tinctures, and syrups then recently introduced by the well-known manufacturing chemists, Messrs. Fletcher, Fletcher, & Stevenson, of the North London Chemical Works, Holloway. The object of the new autometric stopper, an ingenious invention by the same firm, is to enable their "concentrated liquors," prepared by the above-mentioned process, to be conveniently and rapidly dispensed without the necessity of using a separate glass measure.

As a reference to the accompanying illustration will show, the arrangement consists of a stopper formed of pure unvulcanised rubber, through which passes a strong glass pipette, accurately graduated in 5-minim divisions, up to 120 minims. Attached to the tube is a rubber air-ball. On removing the stopper and attachment, and slightly compressing the ball, the required volume of liquor can be immediately withdrawn and transferred to the bottle which is to contain the medicine.

Full particulars of the strength and dose of each of the "concentrated liquors" are contained in a little pocket-list, which may be obtained on application to the firm at their business address, 21 Mincing Lane, London, E.C.

Malt Pastilles.

Messrs. Rowntree and Co., of the Cocoa Works, York, have, after more than two years' patient study, produced a delicious sweetmeat for which they claim the following advantages:—

1. The "Malt Pastilles" contain an unusually large amount of malt extract.
2. They are absolutely free from alcohol.
3. As a sweetmeat they are very pleasant and nutritious.
4. A large amount of the diastatic activity—which makes the extract so valuable as an aid to digestion—of the malt extract has been preserved.

The pastilles are very palatable, and are particularly acceptable to children. We have little doubt that they will quickly win their way into popular favour.

A DISCLAIMER BY DR. A. G. AULD.

DR. AULD writes to us as follows, with an intimation that he intends his letter for publication:—

“ 3 LUGAR-PLACE,

“ KELVINSIDE, GLASGOW,

“ *March 15th*, 1892.

“ To the Editor of the DUBLIN JOURNAL OF MEDICAL SCIENCE.

“ SIR,

“ A notice of my book on Bronchial Affections and Pneumonia in your current issue has come before me. Your Reviewer has made statements contrary to fact. I nowhere in my book hold that pus cells are formed from epithelium, or that proliferated muscle cells may undergo further alterations. I never said that the views of Rindfleisch and Buhl were a travesty of the whole subject of inflammation, but that to apply their views to the *resolution stage of pneumonia* would be a travesty of inflammation.

“ If your Reviewer would stick to the text, instead of making random statements, his judgment on my attitude towards other pathologists would be likely to carry more weight.

“ I am, sir,

“ Your obedient servant,

“ A. G. AULD.”

Although we reserve to ourselves the right of criticising any work which may be sent to this Journal for review without fear or favour, we willingly insert Dr. Auld's letter as he requests.

In doing so, however, we feel that, in justice to ourselves, we should briefly state the grounds upon which we based the remarks upon his book, of which Dr. Auld complains:—

The author describes a multiplication of nuclei in the epithelial cells of the bronchi. He says (page 26) it might be supposed that the nuclei were pus corpuscles which had penetrated into the cell; but he does not admit this explanation, and holds that this contention is useless, as no lymph corpuscles have as yet passed through the basement membrane, and fission of the protoplasm of the epithelial cells is taking place. It is certainly implied that this fission gives rise to objects which may be mistaken for pus corpuscles. As a result of the fission are produced spherical cells, which exhibit amœboid movements and behave generally as white blood. Further (p. 26), “the rounded cells of Debove's layer” (generally looked on as a deeper layer of epithelial: *cf.* Hamilton, “Bronchitis,” p. 5) “proliferate and give rise to round cells resembling pus cells.”

On again carefully reading the passages referred to, we cannot help thinking that the statement made in the review is justified by the text.

P. 50, "I have obtained unequivocal evidence of the participation to a very extensive degree of the muscular coat of the affected blood-vessels in the obliterative thickening. The staff-shaped nuclei were actively proliferating and extending in strings from the muscularis across the intima and mingling with the nuclear new formation derived from the latter." As stated in the review, the author does not say definitely what becomes of these strings of nuclei. But as no one, so far as we know, has ever seen a blood-vessel obliterated by muscular tissue, but always by connective tissue, it is not unnatural to assume that the muscular nuclei mingled with the connective tissue nuclei were supposed to undergo the same development as the latter.

P. 125, "Now to maintain that a lobar pneumonia *terminates* by a catarrhal pneumonia, as Rindfleisch, Buhl, and not a few others have imagined, is a pure travesty of the whole subject of inflammation." This sentence appears to us to justify the statement in the review. That such a termination does occur is the view or opinion of Rindfleisch and Buhl. This view Dr. Auld looks on as a travesty of the whole subject of inflammation.

Finally, on a reconsideration of the whole matter, we fail to see that we have done Dr. Auld any injustice. We had no object, and certainly no wish, to do other than write fairly of his work. As we have said, we differ from him in many points, and in others we fail to understand clearly what his own views are, owing to the obscurity with which they are expressed; but we think that there are few persons moderately acquainted with pathology who will look on our review as unjust or as being so full of random statements as Dr. Auld considers.

ACROMEGALY.

IN the October number of the *Occidental Medical Times*, Dr. Geo. B. Somers, of San Francisco, reports a case of acromegaly. In discussing the ætiology, he dismisses as untenable Klebs' theory that the disease is due to a persistent thymus gland—and in Dr. Somers' case no thymus was found—and Freund's, that it is "an inversion in the evolution of the reproductive life." Unfortunately the autopsy was hastily performed, and neither the cerebro-spinal nor the sympathetic nervous system could be examined, so that Marie's theory—that acromegaly is "a dystrophy allied to myxœdema and affecting some organ (as yet unknown, but possibly the pituitary body) of trophic functions, whose relations are to acromegaly as those of the thyroid gland are to myxœdema"—was not tested in this case. The imperfect autopsy threw no light on the pathogeny of the affection.

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PART I.

ORIGINAL COMMUNICATIONS.

ART. XVII.—*The Dietetic Treatment of Enteric Fever.*^a By WALLACE BEATTY, M.D., F.R.C.P.I.; Senior Assistant Physician to the Adelaide Hospital, Dublin.

THE dietetic treatment of enteric fever is a subject well worthy of consideration, both on account of its frequent occurrence and because there does not seem to be a perfect unanimity amongst the profession on the dietetic treatment of this disease, more especially in regard to the quantity of food which may be given.

Of the specific fevers which are commonly met with, enteric fever is remarkable for its tendency to relapse; the question, therefore, of the cause of relapses is an all-important one. On the view which each physician holds regarding the influence of errors in diet in bringing about a relapse will depend in great measure the care he takes as regards both the nature and quantity of food. If enteric fever is due, as is accepted, to a specific poison in the first instance, a true relapse, which is understood to mean a repetition of the illness—there being involvement of fresh Peyer's patches, a fresh outbreak of rose-spots, and a renewal of the fever—must be due to the same specific poison. This being so, a relapse must be brought about in one of three ways:—1. Exposure to fresh infection; this view has been advocated by some writers. 2. Part of the original poison remains somewhere in the system,

^a Read in the Section of Medicine of the Royal Academy of Medicine in Ireland, on Friday, January 5, 1892. [For the discussion on this paper see page 238].

and has not been developed. 3. The poison thrown out into the intestinal canal in the course of the disease, or that which has been absorbed into and lodged in the mesenteric glands, reinfects the patient. The first theory—viz., that all relapses depend upon exposure to a second infection, either by the patient having remained in the same place where he originally acquired the infection and so having become infected again, or by two distinct infections having occurred during the period of incubation before the outbreak of the primary illness (the primary illness having been short, and so the susceptibility of the disease not having been exhausted) is shown by Liebermeister to be untenable; for, he argues, patients get relapses who are removed from all sources of fresh infection, and relapses occur in many cases after a primary attack of ordinary duration; consequently, this view, even if it may explain some cases, cannot account for all. Liebermeister's conclusion is—"Relapses are usually due to the same infection that caused the original attack; part of the poison must have remained latent somewhere in the body, not developed during the first attack, not destroyed or expelled, and not beginning to mature until afterwards."^a This is the second possible cause of relapse. The third possible mode by which a relapse is brought about—viz., reinfection by the products thrown out in the course of the illness—has been advocated by Maclagan, who believes that healthy glands become inoculated by the slough thrown off by those first affected, and he maintains that relapses are met with only when there has been constipation during convalescence. In opposition to this view, the observations of others tend to show that relapses occur just as frequently when there has not been constipation, and a further difficulty in accepting this theory is pointed out by Murchison—viz., that the glands affected in relapses are higher up than the sloughing glands involved in the primary illness, and, consequently, inoculation by the slough can hardly occur. Possibly the mode by which a relapse is brought about may be different in different instances—some patients may get a second infection; in other cases, a part of the original poison may remain undeveloped until after the primary illness is over; while in others the poison thrown out in the course of the disease may reinfect—but, whatever be the true explanation, one point is clear, a relapse implies that the susceptibility to the disease is not exhausted in the patient who is the subject of the relapse. The question at once arises—

^a Von Ziemssen's Cyclopædia.

Why are relapses so much more common in enteric fever than in the other specific fevers—*e.g.*, typhus, measles, scarlatina? I have only once seen a relapse in measles; this occurred in a man who was admitted into the Adelaide Hospital a few years ago, suffering from measles; he had only been ten days convalescent from the same disease, for which he had been under treatment in Cork-street Fever Hospital. Bristowe, in his “Practice of Medicine,” alludes to such cases as occasionally, though rarely, occurring.

Before proceeding to the discussion of the question—“Why are relapses so common in enteric fever as compared with other fevers?”—another question presents itself, *viz.*, “How can one be quite sure in a given case that a true relapse has taken place, and that the symptoms are not due to further changes taking place in the already diseased intestinal glands and not to fresh changes occurring in glands which escaped in the primary illness?” I think it is by no means an easy question to decide, and, in many cases, I believe, so-called relapses are merely recrudescences of the primary illness. We find, on examining the statistics of different writers on enteric fever, a strange variation in the percentage of relapses. Thus, Biermer had relapses only in $3\frac{3}{10}$ per cent. of his 1,136 cases. Bäumlér in 73 cases had relapses to 11 per cent. If we are to consider that an apparent convalescence—as evidenced by apyrexia for a few days, disappearance of spots, and a general improvement in the condition of the patient—followed by fresh fever of fourteen to twenty days duration and fresh spots, is a certain proof that a relapse has occurred, no doubt it occurs commonly; but if we study each of these points separately we shall see that the diagnosis of a relapse is not easy. For, firstly, as regards the temperature, the fever sometimes comes down early before the illness can have had time to run its course; in such a case a second rise could hardly be looked upon as a relapse. Secondly, if the spots are few, it is possible that the old ones may disappear before a fresh crop appears; and if the interval between the two crops coincided with a normal temperature, the case might look like a true relapse. Moreover, there is often a return of appetite and an apparent convalescence early in cases when we can hardly feel justified in considering that the primary illness is over. Murchison alludes to a statement of Sir William Jenner (to which he takes exception), who expressed the opinion that, except in a case of relapse, fresh spots never appear after the thirtieth day, and that febrile symptoms after that date are always

due to some incidental complication. Should the fact of apyrexia occurring after a period of four weeks be an invariable proof that the primary illness is over, the diagnosis of relapse would be easy; but we cannot lay down any definite duration for the primary illness. Many cases last much longer than four weeks without any apyrexial period. Therefore, we are forced to regard this prolonged pyrexia as due to the primary illness, unless we are to adopt the suggestion thrown out by Murchison, as a possible explanation of prolonged cases—viz., that in these cases a true relapse may overlap the primary attack without any apyretic interval.

Lastly, the proof that there is such a condition as a true relapse depends upon the examination of the intestines in fatal cases. Even then, care must be exercised in the examination, as it is, I think, common to find, in cases which are fatal during the primary illness, glands ulcerated in the lower part of the small intestines, and swollen, without ulceration, higher up—the involvement of the glands proceeding in the order, as to time, from below upwards. The only pathological proof, therefore, that convalescence had taken place, and was followed by a relapse, would be the presence of cicatrising ulcers along with swollen glands, and the fact that so long a time had elapsed from the commencement of the illness that glands, primarily affected, could not be in a state of simple swelling only. Trousseau, as Murchison states, denied that any fresh disease of the bowel occurred. Trousseau writes—“To explain the intensified returns of the fever, and the successive eruptions, we must suppose that the morbid poison has not exhausted itself in the first outbreak, and that the economy, to get rid of it, requires repeated efforts. These returns of the fever are neither relapses, nor still less are they new attacks; it is the same attack, the symptoms of which, temporarily interrupted, recur under the influence of the same morbid cause which produced them in the first instance. However complete the symptoms may be, and although the eruption reappears, the characteristic intestinal lesion never returns.” This view is not accepted by Murchison and other competent observers. If we grant, therefore, that relapses do occur and are common, the question, as stated above, arises—“Why are they so much more common in enteric fever than in the other specific fevers?”

The fact that the lesions in enteric fever are in the intestines, and so are exposed to the direct contact of food more or less altered

by digestion, has naturally suggested the theory that relapses are brought about by errors in diet. Most writers on enteric fever seem to give little countenance to this view, as they fail to comprehend how an illness due to a specific poison can be reproduced by any other influence except the poison. Certainly, it is hard to understand how errors in diet can act in bringing about a relapse. I feel convinced, however, that some, at least, of the relapses I have seen were due to errors in diet. In two of my cases solid food, brought surreptitiously by friends of the patients, seemed to act as the cause. Liebermeister, who believes that errors in diet may bring about a relapse, remarks—"As a matter of course, the injury produced by any such means can only serve as an exciting cause to processes that follow, stimulating the development of germs which would otherwise have remained dormant for a time, or which might even have been eliminated from the body."

An argument that if true relapses can be brought about by errors in diet they should occur oftener, may be met by the answer that errors in diet, to produce a relapse, must be made in cases of patients whose susceptibility to the disease is not exhausted.

Whatever view may be held as to the genuineness of so-called relapses, and whatever theory may be held as to the cause of relapses, I think the necessity for care in diet, considering the position of the lesions, must be admitted. It is impossible not to believe that grave injury may be inflicted upon the inflamed and ulcerated bowel by want of care in both the nature and quantity of food. Still, I believe, sufficient care is not exercised in this matter. While most physicians are agreed upon the advisableness of liquid food, many show too little regard as to the quantity of this liquid food which they allow. Indeed, it seems to be the idea of many practitioners, to judge of them by their practice, that provided they are careful as to the nature of the diet, the quantity is of no great importance; the patients are allowed to take as much as they or their attendants desire. Most text-books say little about the quantity permissible; yet the quantity of food permissible is just as important a consideration as its nature, and much harm may be done by excess of allowable food. It is pleasant to see that Dr. J. W. Moore, in his recently published "Text-book of the Eruptive and Continued Fevers," does not lose sight of this important point. I shall consider first the kind of food, and then the quantity of food permissible.

Milk is, unquestionably, the best and safest food for enteric

patients; given diluted with a little soda-water, lime-water, or plain water, it agrees well with most patients. If there is diarrhœa, it is best to give it boiled; otherwise boiling is unnecessary. Sometimes it is necessary to peptonise the milk. If a patient can take milk, milk alone is the best food during the entire illness. If milk is vomited, or curds are passed by stool, whey may be advantageously given; if whey is given, beef-tea with the grounds, or beef-juice, should be given along with the whey to take the place of the albuminate casein. With regard to beef-tea, some object to its administration on the ground that it causes gaseous decomposition in the intestine, and so increases the tympanites. I have not found this to occur. I consider that beef-tea is a useful addition to milk diet when the patient is unable to take a sufficient quantity of milk. It seems also to act as a stimulant.

Farinaceous foods are often given. I am not in the habit of giving them to enteric patients. I object to them on two grounds—firstly, I think they may cause troublesome flatulence, and may increase the fever, and, if given early in convalescence, may cause a fresh outburst of fever; secondly, they are not needed when sufficient milk can be taken. In a severe attack of enteric fever the salivary glands are quite inactive, and certainly no digestion of starchy food can take place in the mouth. No doubt, in health the saliva plays an insignificant part in the digestion of starch food; still, it is, perhaps, not unlikely that when the salivary glands are inactive, the amylolytic ferment of the pancreas is inactive too. If starchy food is given, it can be given only in a thin semifluid form, except in the mildest cases.

Beaten-up eggs are given by many physicians. I seldom give them. I think when sufficient milk can be taken, eggs are unnecessary, and I am doubtful if they are well digested by enteric patients. Of course, when patients cannot take milk the administration of eggs may be absolutely necessary. They ought, then, to be given raw, beaten-up, and well diluted.

Having considered the nature of the food permissible, I shall now consider the quantity. In my opinion, two to three pints of liquid nourishment in the twenty-four hours is ample food for adults, less, proportionately, for children. By care in the quantity and the nature of the food, many of the symptoms which are liable to give trouble are more easily controlled.

Diarrhœa.—Avoidance of excess of liquid food is the best general means of counteracting this symptom. In my experience

I have had very little trouble from diarrhœa, and I am convinced that this has been due mainly to the care taken in avoiding excess of food. Patients have been under my care in the Adelaide Hospital who before their admission were allowed what I should consider a great excess of food, and who had excessive diarrhœa; these patients on restricted diet were almost at once relieved of this symptom. One patient, who before his admission to the hospital had been getting two quarts of milk and three beaten-up eggs, with stimulants in addition, in the twenty-four hours, and had profuse diarrhœa, was no longer troubled with it on restricted diet. I have had constipation to deal with much more frequently than diarrhœa. With regard to constipation, I think it is well not to allow more than two days to pass without a motion from the bowels, unless the patient has had a severe hæmorrhage previously. There is one important reason for ensuring an action from the bowels at least every second day—viz., to avoid trouble from accumulated fæces during convalescence. In cases where there has been constipation I have known distress occur during convalescence from hardened fæces in the colon. The objection that when the diet is limited as I have indicated constipation results, is, I consider, of little weight, as constipation can very easily be remedied.

Hæmorrhage.—This symptom, like diarrhœa, is best guarded against by restricted diet. A man under my care in the Adelaide Hospital got a severe hæmorrhage from his bowels, which followed directly the administration of an excessive quantity of milk, the nurse having yielded to his clamour for abundance of milk. For several days after the hæmorrhage I feared to allow him more than one pint of whey, with stimulants, in the twenty-four hours. He made a good recovery. Excess of diet will predispose to hæmorrhage by increasing the inflammatory changes in the ulcerated bowel.

Tympanites.—This symptom is kept under control by limiting the quantity of food. By care in the diet tympanites does not often give trouble.

Sleeplessness.—It is seldom necessary to resort to large doses of hypnotics when care is taken to avoid excess of food. Patients sleep much better on a carefully restricted diet, and often no hypnotic is needed.

Delirium.—I think if excess of food be permitted, delirium will give more trouble.

High Temperature.—Perhaps unnecessary alarm is sometimes shown if the temperature touches a high point, 104°–105° Fahr., and perhaps harm may be done by too hasty a resort to antipyretics. Antipyretics are seldom called for (with the exception of the always useful and grateful tepid sponging), unless the temperature remains persistently high morning and evening for a few days—a high evening temperature, 104°–105° Fahr., while the morning temperature is one or two degrees lower, does no harm. Of course, if a very high temperature is reached, antipyretic remedies must be used. I think the temperature is also, like the other symptoms above discussed, influenced by the quantity of food. Dr. Head has told me that he often observed a marked improvement to occur in the general symptoms when from any cause, such as threatened hæmorrhage, the quantity of food had to be reduced to a minimum. The question arises—"Is the limited quantity of food above recommended sufficient for the patient's nourishment?" Well, it is very doubtful if, when the digestive powers are so much impaired as they are in enteric fever, a patient can digest more; consequently, any food which escapes digestion must act as an irritant to the diseased intestine. I cannot do better than quote Broadbent in this connection:—"The attention of the medical attendant will in most cases be required rather to moderate the amount of food given than to urge its administration. . . . The key to the regulation of the diet—it may almost be said to the management of the patient—is to be found in the careful inspection of the stools; . . . when curds appear in the dejections, either too much milk is taken, or too much at a time, or its digestion is interfered with. If the passage of undigested milk is not remedied, there will certainly be flatulence, discomfort and restlessness, elevation of the temperature, and in most cases diarrhoea."^a Broadbent recommends as the diet, two to three pints of milk, and a pint or pint and a half of beef-tea or some equivalent; this is rather more than I am in the habit of giving—his maximum being four and a-half pints of liquid food—but his diet is very restricted as compared with what is allowed by many practitioners.

Another matter for consideration is, "May simple drinks be allowed *ad libitum* to relieve thirst?" Sir William Jenner^b says:—"Patients suffering from typhoid fever should be allowed an

^a Typhoid Fever—Quain's Dictionary of Medicine.

^b Treatment of Typhoid Fever.—Lancet, Nov. 15, 1879.

unlimited supply of pure water." Broadbent allows this also; he writes:—"The patients should, of course, be allowed to drink freely of cold water, toast-water, or any simple drink." With all deference to so great authorities, I am disinclined to sanction such great freedom, and, indeed, I cannot say that I have found thirst so very distressing as to call for an *unlimited* supply of simple drinks. I should fear that unlimited freedom in the use of simple drinks would cause abdominal discomfort, and, perhaps, diarrhœa. Water in moderate quantity, pieces of ice, and a little lemonade are, I think, sufficient. Tea, morning and evening, is also very grateful and safe.

Whatever diet is adopted in a given case, it is, I think, well not to alter it much in the course of the illness, as the digestive tract in enteric fever is very sensitive to alterations in food. The plan of treating enteric patients, as one would treat a chronic invalid—viz., making alterations in the food from day to day—is, I think, dangerous, and certainly not called for.

There is another point in treatment which is worthy of attention; it is this—towards the end of the third week, when the ulcers are formed, it is often well to lessen somewhat the quantity of food.

A very important consideration is, "When may a patient be regarded as convalescent, and allowed a change in diet?" The guides are, the presence or absence of spots, the temperature, the tongue, the condition of the abdomen, the size of the spleen, and the stools.

1. *The presence or absence of spots.*—I am sure that all physicians are agreed that though the patient may appear convalescent, and every febrile symptom gone, the presence of enteric spots is proof that the illness is not over. One occasionally sees enteric spots, when every other symptom of the illness is over. Of course, no conclusion can be drawn when spots are absent, as they are often absent all through the course of enteric fever.

2. *The temperature.*—This is a very important guide. Murchison writes:—"Convalescence can only be said to be fairly established when the temperature is normal on two successive evenings." The temperature should, I think, be normal for at least a week both evening and morning before a change in diet be allowed. It is well to take into consideration also the mode in which the temperature has come down before it reaches

the normal; whether very gradually or quickly; if the temperature has fallen gradually, a week of complete apyrexia is generally sufficiently long to withhold more food; if there has been a rather sudden fall, this time is not sufficient. But though the temperature is a very useful guide, it is not an infallible one. Cases of enteric fever occur in which the temperature remains normal throughout the greater part of the illness; and, on the other hand, complications may arise during the illness, the effects of which may last after the enteric lesions have healed; which complications, while they keep up the fever, do not necessitate a restricted diet. To sum up: a normal temperature is an important, but not a certain guide that convalescence has begun; a high temperature, provided there is no complication present, is an almost^a certain guide that convalescence has not begun.

3. *The condition of the tongue.*—I think that the only help that examination of the tongue affords as to whether convalescence is established or not is this: if the tongue is dry, the illness is not over; it generally becomes clean when convalescence commences, but certainly not always so; the coating will, in many cases, not clear off until solid food is given, and then it is often remarkable how rapidly the tongue cleans.

4. *The condition of the abdomen.*—It must have lost its tympany.

5. *The size of the spleen.*—The examination of the spleen is most important. Excepting cases in which the spleen has been, previously to the illness, enlarged from some chronic condition, its enlargement contra-indicates a change of food. I have more than once seen patients, apparently convalescent, but with a palpably enlarged spleen, get a return of fever, when I was tempted by the disappearance of the other symptoms to allow a change in diet. With regard to enlargement of the spleen in enteric fever, Liebermeister writes: "Gerhardt makes a statement that in many cases in which a relapse takes place, the enlargement of the spleen is not at all diminished during the non-febrile period that intervenes between the original attack and the relapse." Perhaps in many of such cases of so-called relapse, the condition is rather a continuance of the primary

^a I say "almost," as occasional exceptions do occur, in which the temperature remains above the normal, unaccountably, long after every other symptom of the illness is over.

illness, with a fresh outburst of fever. I should be disinclined to consider convalescence as begun if the spleen remained palpably enlarged.

6. *The character of the stools.*—If they are fluid and light in colour, convalescence has not begun.

The frequency of the pulse does not serve as a guide, as it may not only be slow during the entire illness, but it may be frequent during convalescence. Murchison writes: “The pulse may be quicker than during the fever.” I have noticed this increased frequency in some cases. To recapitulate: Convalescence from enteric fever may be regarded as begun—if there are no spots present, if the temperature is normal for at least a week, if the tongue is moist, if the abdomen is not tympanitic, if the spleen is not enlarged, and if the stools are formed and of a natural colour.

When convalescence has begun, the next consideration is as to what is the safest way to change the diet. I think that the safest way is to increase very gradually the consistence of the food. A sudden change from liquid to solid is often followed by a fresh outburst of fever. The digestive tract, long accustomed to liquid food, cannot tolerate, as a rule, a sudden great change in its consistence. For a few days, indeed, it is safer to increase the quantity of the food which has been given during the illness rather than to make any change in its nature. I change the diet much as follows:—first, I give milk thickened with cornflour or arrowroot; then, after a few days, a lightly-boiled egg and a few plain biscuits, then bread, then fish, and so on; all along I watch the temperature carefully, so as to detect at once any rise of temperature, should it occur, as a rise would indicate, in most cases, that the food was being increased too rapidly, or injudiciously.

A very natural question may be asked: “Granted that many cases require such extreme care in diet, is it necessary to be so particular in every instance? May not more laxity be allowed in mild cases?” This question is best answered by another: “What is meant by a mild case?” If it is meant a case with mild symptoms, laxity may not be allowed without risk, as, undoubtedly, many apparently mild cases occur which suddenly get grave symptoms and die, and *post-mortem* examination reveals an amount of disease out of all proportion to the earlier symptoms. Such surprises may not be common, but they do

occur. If it is meant by a mild case a case with only slight intestinal disease, more laxity may be allowed; but how are such mild cases to be recognised with perfect certainty? They cannot be. Therefore, if it is granted that care in diet is necessary in some cases, it is best to take it in all. I believe that while it may be true that those who give abundance of food in every case, or those who allow such abundance in the apparently mild cases, are likely to have more rapid recoveries than those who do not, the latter are more likely to have fewer fatal cases.

The experience I have had has led me believe—

1. That most cases, if not all, are best treated by liquid food in limited quantity—at most three pints; this food being chiefly or entirely milk.

2. That by thus limiting the quantity of liquid food, diarrhœa, hæmorrhage, tympanites, sleeplessness, and delirium will be more easily controlled.

3. That errors in diet cause frequently a renewal of the illness, which in its clinical features is exactly what most writers on enteric fever would regard as a relapse.

I have dwelt so strongly on the dietetic treatment of enteric fever, because I consider it a matter of very great importance, and because it is mainly as regards diet that physicians differ from each other in their treatment of this disease. I do not mean to imply that I consider other points in the treatment of enteric fever as of little importance.

ART. XVIII.—*Further Observations on the Causes and Treatment of Dysmenorrhœa.*^a By THOMAS MORE MADDEN, M.D., F.R.C.S.Ed.; Obstetric Physician and Gynæcologist, Mater Misericordiæ Hospital, Dublin; Examiner, Conjoint Board, Royal College of Surgeons and Apothecaries' Hall, Ireland; &c.

IN none of the many branches into which modern medicine has become subdivided has such rapid progress been effected during the last decade as in that within which the special study of diseases peculiar to women is included. Nevertheless, this development might probably have been still greater were it not for the occasional evanescent prevalence in matters gynæcological of theoretical

^a Read before the Section of Obstetrics in the Royal Academy of Medicine in Ireland, on Friday, March 18, 1892.

dogmas which are not borne out by subsequent experience, or by the attempted displacement, on possibly inadequate grounds, of well-established doctrines, such, for instance, as those heretofore generally accepted concerning the ætiology and treatment of difficult or painful menstruation.

Under these circumstances, the rediscussion of even the most familiar subjects connected with the practice of gynæcology may from time to time become an inevitable necessity, and at the present date that appears to me especially the case with regard to the causes and treatment of dysmenorrhœa, one of the forms of which was brought under the notice of this Academy in a communication of mine a few years ago. Since then some more recent doctrines in reference to this complaint have been propounded on high authority, which, if generally accepted, must to a large extent revolutionise the ideas and methods of treatment heretofore generally adopted as to this complaint. Before that consummation is arrived at it may be well that those statements, and the practice founded thereon, should be carefully considered and tested by a comparison of the clinical experience of gynæcologists who have not as yet, at least, seen cause to recant their earlier teaching with that of those who have been converted from the possible errors of their former ways in this respect. Therefore, I now submit to the Academy the following recapitulation of some of the points now controverted with reference to those views, by acting on which, as I think, the most satisfactory practical results may be secured in the treatment of dysmenorrhœa.

Pathological Importance of Dysmenorrhœa.—Of all those disorders of menstruation which furnish a large proportion of the gynæcological cases treated in the hospitals with which I am connected, dysmenorrhœa is that most frequently noted, not only at the earlier catamenial periods, but also in later or married life. In the former this trouble commonly comes before us in association with one or other of the manifold reflex or sympathetic nervous or constitutional derangements traceable to the imperfect accomplishment or evolution of the catamenial function in cases of difficult or painful menstruation; whilst in subsequent years it is no less often brought under clinical observation as one of the evidences of some of the local causes of infecundity. In regard, therefore, not only of the intensity of the immediate suffering attending well-marked dysmenorrhœa and the complexity and possible gravity of its consequent reflex nervous and constitu-

tional disturbances, but also in view of its direct bearing on the fertility of the patient, the now disputed ætiology and treatment of this disorder, however inadequately they may be introduced by the present writer, are entitled to the careful consideration of this Academy.

Frequency of Painful Menstruation.—As already observed, dysmenorrhœa is brought under clinical observation more frequently than any other catamenial derangement. Thus, for instance, in the last 1,000 gynæcological cases of every kind noted in the out-patient department of my hospital, in 189 instances some menstrual disorder was especially complained of—viz., dysmenorrhœa in 110, amenorrhœa in 42, and menorrhagia in 37 cases. These figures, although they cannot be perhaps regarded as representing the exact proportion of each of these complaints (inasmuch as, whilst many women may long suffer from amenorrhœa or menorrhagia before obtaining medical advice, few patients can long withstand the periodic recurrence of the tortures of acute dysmenorrhœa without seeking relief), nevertheless at least show the greater frequency with which, in the instances referred to, such cases were brought under my clinical observation, and help to prove the fact that dysmenorrhœa is here, as elsewhere, the most frequent of the catamenial complaints that come before us.

Classification of Dysmenorrhœal Cases.—In the clinical records of the hospital on which the foregoing statement as to the frequency of dysmenorrhœa is founded, it was deemed advisable to classify in some way the different cases and forms of dysmenorrhœa there noted, and for this purpose their ordinary subdivision under the three headings of “neurotic, congestive, and obstructive dysmenorrhœa” was followed. But however convenient for reference or description any arrangement such as this may be, it must at best be merely arbitrary and often inapplicable, being obviously founded on the greater or lesser predominance in each instance of one or other of the special symptoms of the coexistent neurotic or inflammatory condition, or of those still more directly due to local and mechanical causes. It, therefore, cannot be too explicitly stated or too often reiterated that in every case and form of dysmenorrhœa there is one common factor in the causation of the complaint to be reckoned with—viz., some obstruction, physical or mechanical, to the free escape of the catamenial outflow, which impediment may be due either to the condition of the parts concerned in the menstrual function, or to the character of the

resulting discharge; and on the recognition and removal of that obstacle, whether by constitutional remedies, as may be possible in certain instances, or by local measures, as is necessary in a far greater number of cases, will be found the key to the general pathology and successful treatment of painful menstruation. This general statement is, I think, equally applicable to every variety of dysmenorrhœa, not only in its uterine forms, to which the following observations are chiefly confined, but also to those no less important cases in which the causes of the complaint are traceable to the condition of the ovaries or of the Fallopian tubes, and to the consideration of which I hope, possibly, to be able to return on a future opportunity.

Obstructive Dysmenorrhœa.—On this subject my experience and opinions are wholly at variance with those of Dr. Champneys, who, in his “Harveian Lectures on Puerperal Menstruation,” expresses very forcibly his incredulity with regard to the considerable influence heretofore commonly, and as I believe correctly, ascribed to mechanical obstructions from flexions or stenosis of the cervical canal as causes of spasmodic dysmenorrhœa. “Until the last few years,” he says, “the question of the pathology of spasmodic dysmenorrhœa was considered settled by a very lucid and intelligent explanation known as the ‘mechanical system of uterine pathology.’ The theory of this pathology was that it was owing to obstruction to the escape of the menstrual fluid, due to flexions of the uterus or to stenosis of some part of the canal. Other elements are cited in the shape of the texture of the uterine tissue and disorders of the uterine circulation by flexion. They are thus summarised—(a) Flexion of the uterus causing obstruction; (b) Stenosis congenital, due to swelling of the mucous membrane, fibroids, polypi, hypertrophy, increased flow of blood; (c) Chronic congestion of the uterine walls, due to flexion.” . . . “We have now gone through the whole series of statements in favour of the mechanical theory of dysmenorrhœa, and have found that most of them are at variance with facts as ascertained, while many of them are founded on interpretations which are capable of being reviewed from another side, and are most probably erroneous. It seems to me that had the facts as regards flexions, stenosis, and the uterine circulation been ascertained before propounding a theory, the mechanical theory of dysmenorrhœa could never have been propounded. To ascertain the facts that have now rendered it untenable has been the work of years; but this is not the only

instance in medicine of the labour entailed on innocent persons by the promulgations of a theory on insufficient grounds. Some of the most important work has appeared in the *Archiv für Gynækologie*, but, it is curious, even quite recently the Germans, who cannot be ignorant of Vedeler's papers, speak as if the facts were still debatable, or as if they had appeared abroad, instead of in the principal place of resort for such papers, in the whole German current literature. I am inclined to think that in matters of science Englishmen live less on an island than other people. I trust that in the above remarks I shall not be interpreted as questioning the good faith of the theorists, but only as criticising their scientific methods. It is true that no theory can be developed without the aid of the imagination, but all ideas should be kept in limbo until they have been subjected to the severest criticism by their parents. It is also true that, what is true is generally simple. But the converse—what is simple is generally true—by no means holds; and the mechanical theory seems to be an instance of such logic."

In the able Lectures from which the foregoing observations are taken we have, I think, some evidence that Dr. Champneys' own logic is not altogether free from such fallacies as he ascribes to the supporters of the mechanical theory of dysmenorrhœa. However, without attempting to discuss that question, I may at least, in reply, state that in many hundreds of instances patients labouring under spasmodic dysmenorrhœal suffering have now come under my care in hospital and private practice in whom, on careful examination, no other cause could be assigned for the symptoms complained of than the existence of stenosis of the cervical canal or its constriction by some flexion. And in such cases the operative treatment of the stenosis or the rectification of the flexion, without any other treatment, was followed by the complete and, as far as I know, permanent cure of the dysmenorrhœa. Therefore, unless Dr. Champneys, or anyone else, can offer a more logical explanation of these facts than that to which my possibly illogical mind would lead me—viz., that in those cases the cause of the patient's monthly spasmodic suffering was obstruction, and its cure was effected by the mechanical measures I employed—I shall adhere to my own opinions and practice, and would venture to recommend other practitioners to act on similar views, until at least they obtain some proof (which it may, perhaps, be found difficult to afford) that the doctrines of those who teach otherwise are founded on larger and more accurate clinical observation or more successful

results than have been obtained from the methods of treatment heretofore adopted by myself and others in such cases. Relying on that experience, therefore, I shall now endeavour to put my views on this subject briefly before you.

Diagnosis.—Of the uterine causes of dysmenorrhœa, as well as of the commonly co-existing sterility of the patient in such cases, probably the most important, as well as the most curable, is obstruction, congenital or acquired, of the cervical canal. The consequences, immediate or remote, of this condition are daily brought under gynecological observation, and unquestionably few of the complaints that come before us in our branch of practice give rise to more intense and persistently recurring suffering. Nor is there any disease which, when unrecognised as to the true cause, and hence, as is too often the case, treated by sedatives, spasmodics, and other equally ineffectual palliative remedies, may produce more serious ill effects, not merely on the general health, but also on the cerebro-nervous system of the patient. Hence the necessity in all cases of persistent uterine dysmenorrhœa (when not obviously of a purely nervous form) of careful local examination and the use of the sound, by which the existence, position, and cause of any uterine mechanical obstruction to the menstrual flux can be ascertained.

Causes.—Obstructive dysmenorrhœa may result—1st. From stenosis, congenital or acquired, of the cervical canal, and more especially of the os internum. 2nd. From constriction of the canal by an acute flexion. 3rd. From the presence of an uterine tumour. 4th. From obstruction occasioned by an intercervical neoplasm. In the majority of instances, however, this condition is consequent on simple congenital atresia of the cervical canal, or on its occlusion by plastic exudations resulting from endometritis. The next most commonly observed of these mechanical causes of dysmenorrhœa are the different flexions of the uterus. The frequency of the former class of cases is far greater than is generally supposed. Thus, as I stated in a paper read at the Berlin meeting of the International Medical Congress, in my hospital nearly 11 per cent. of instances of obstructive dysmenorrhœa or of sterility similarly caused had been under observation in a total of 7,000 gynecological cases.

Symptoms.—I need not here enlarge on the symptoms of obstructive dysmenorrhœa, as these vary widely in each case in accordance with the situation, causes, and extent of the obstruction

and the constitutional condition of the patient. The existence of obstruction, whether from stenosis, flexion, or pressure, may be commonly inferred from the character of the pains attending the uterine efforts to overcome the mechanical obstacle to the catamenial flux, these pains in such cases being extremely similar to the grinding or cutting pains of the first stage of labour, and often equalling, if not exceeding in intensity, the throes of parturition rendered difficult by persistent rigidity of the os uteri. Moreover, under such circumstances, we are very likely to have extension of the resulting irritation from the uterus to the Fallopian tubes or to the ovaries, producing all the symptoms of salpingitis or oöphoritis. After a variable period of suffering, in most instances, the obstruction is at last temporarily overcome, and the dysmenorrhœal dribble is eventually succeeded by a profuse menorrhagic discharge, after which the patient's troubles are over for that month. In some instances the obstruction proves more intractable, and the pain continues until the catamenial flux has ceased, or the uterine action, as occurs in some instances, forces the retained menstrual fluid through the free orifices of the Fallopian ducts, and so may give rise to pelvic peritonitis or hæmatocele.

Treatment.—In any case of obstructive uterine dysmenorrhœa it is obvious that the only rational course of treatment is the removal of whatever may be the physical impediment to the escape of the menstrual fluid, and that in such cases no curative effect can be expected from any drugs, however useful some of those may be as palliative agents. Thus, for instance, if catamenial pain be due to an acute flexion, the dysmenorrhœa can be cured only by rectification of the malposition; or if occasioned by pressure on the cervix of an uterine or other tumour, this must be removed or pushed well up above the pelvic brim. In like manner in those far more numerous cases in which the difficulty arises from cervical stenosis, this must be overcome before we can hope to remove the menstrual suffering.

Dilation of the Cervical Canal.—I do not propose in this connection to rediscuss the various means from time to time suggested for the mechanical dilation of the cervical canal in cases of obstructive dysmenorrhœa; nor need I here refer again to the history of the successive steps (of which an account may be found in my previous communication to the Academy on this subject) by which the formerly-employed methods of expanding the stenosed passage by means of sponge tents, laminaria

bougies, and other similarly tedious, painful, and often hazardous appliances, have now become generally replaced by rapid dilatation with the assistance of one or other of the instruments devised for that purpose by Lawson Tait, Hegar, Duke, and others, including myself.

With regard to bi-bladed expanding instruments of this kind, such as Duke's or mine, Dr. Champneys says, "Two or three-bladed dilators are bad instruments; they stretch the cervical canal unequally and are liable to tear it. They are out of fashion in England, though not apparently in America or on the Continent." The first of these assertions is merely a statement of Dr. Champneys' individual opinion, which, however emphatically expressed, is not, as far as I am aware, entitled to any greater consideration than he apparently accords to the experience to the contrary of those who, like myself, have largely and advantageously used the instruments of which he disapproves. Whilst, with regard to the second point, it seems obvious that if, as Dr. Champneys has persuaded himself, dilators of the class in question were actually "out of fashion in England," there should be little, if any, demand for them, inasmuch as a taste for acquiring gynæcological instruments is one not generally indulged in save by those likely to use such appliances. Therefore, as I am sure that Dr. Champneys will be glad to have any error of his, however trivial, corrected, I may observe that I have very recently been informed by one of the principal London surgical instrument manufacturers—viz., Messrs. Arnold & Son—that they "have sold some hundreds of these dilators since their introduction." Hence, two-bladed cervical dilators can hardly be regarded as out of fashion in England, and, I may add, probably never will be so in any country as long as women continue subject to obstructive dysmenorrhœa and are judiciously thus treated by cervical dilatation for that complaint. Be that as it may, however, at any rate I still prefer the dilator I introduced here some years ago, and which has been subsequently modified and thus rendered more effective for its purpose. This instrument, the latest pattern of which I now exhibit, differs from others of the same class in the circumstance that the expansion effected therewith is in imitation of the natural process of uterine dilatation during menstruation—viz., from the os internum downwards in the course of the cervical canal—and, from subsequent experience of its use in many hundreds of instances

of obstructive dysmenorrhœa, I would recommend it to other gynæcologists as an effective and, when properly used with due caution and in suitable cases, a safe means of rapidly overcoming cervical stenosis, and so relieving consequent dysmenorrhœal pain.

The Use of Metrotome, &c.—In such cases I regard the use of any cutting instrument as, generally speaking, unnecessary, occasionally giving rise to troublesome hæmorrhage, and still more objectionable by reason of the liability of the cervical incision to become a portal for the introduction of sepsis, as I have seen exemplified in more than one instance. In some few exceptional cases of dysmenorrhœal stenosis, however, the obstruction may be so unyielding that it cannot be overcome by any available method of dilatation, and such cases may probably be best dealt with by the cautious use, with due aseptic precautions during and after the operation, of Sims' knife, or else of a single-bladed metrotome, such as Simpson's, preferably to any of the more recent instruments of the same kind. Whilst as to scissors such as Keuchenmeister's, the use of which is still recommended by some writers in the cases now under consideration, all I can say is that their employment appears to me likely to expose the patient to all the septic dangers above referred to with little probability of relieving the disease for which they are employed, cutting, as they do, the os externum, where obstruction comparatively seldom exists, into a gaping wound with everted or retracted lips, and leaving untouched the os internum, which, as I believe, is the actual seat of the stenosis in nine-tenths of these cases.

Maintaining Patency of Canal.—Whatever method of dilatation be adopted to effect the cure of obstructive dysmenorrhœa, it is obviously essential that the patulous condition of the cervical canal should be permanently maintained. For this purpose, as far as I know, no very generally applicable and effective means was available, with the exception of Dr. Greenhalgh's elastic stem, which I have used with advantage in many instances, until a couple of years ago, when Mr. Duke, of Dublin, suggested the use of a spiral wire stem, to be introduced directly after operation and kept *in situ* until all tendency to subsequent contraction has been overcome. This suggestion was one which at first I was rather sceptical as to the advantage of, as it appeared to me probable that the stem might prove not

only an immediate source of local irritation, but also subsequently a focus for sepsis. However, from a fair trial of this appliance, which I have now used very extensively, I can corroborate the advantages claimed for its employment. These stems, which are made by Messrs. Arnold, being extremely flexible and well open from point to point, may be left *in situ* for an almost indefinite period, provided always that due aseptic precautions be taken by regular daily vaginal irrigations to keep the passage and stem perfectly free from all morbid secretions. As a rule, however, I think that no stem should be worn continuously for more than a month; and in every case if, notwithstanding the precautions above referred to, any inflammatory trouble or septicæmic symptoms should supervene, it should, of course, be immediately withdrawn.

Congestive Dysmenorrhœa is of special clinical interest as a frequent result of chronic endometritis, and hence is more commonly met with later in life and in married women than other varieties of dysmenorrhœa. In the congestive condition on which the form of difficult menstruation is consequent, besides the uterus and its appendages, the other pelvic as well as abdominal viscera are usually more or less involved, as is more particularly seen in the frequently engorged state of the portal circulation in such cases. In most of these instances the tumefied uterus is, moreover, to some extent displaced, either by ante- or retroflexion or version from the greater degree of congestive hypertrophy that may be developed in one or other of its walls, or else is forced down lower than its normal position in the pelvis by its generally augmented bulk and weight. In the same way the functions of the rectum and bladder are interfered with, a certain amount of cystitis or vesical irritability or hæmorrhoidal trouble being seldom absent in cases of this kind.

Symptoms of Congestive Dysmenorrhœa.—For a few days before the menstrual period the patient generally complains of some degree of lumbar pain and sense of uterine weight and bearing down, gradually developing on the approach of the “change” into acute localised intermittent pain and persistent feeling of distension and discomfort in the hypogastric region, which steadily increases, and is followed by distinctly expulsive pains, accompanied by a scanty menstrual discharge, in many instances intermixed with membranous shreds or clots. This often abates or entirely ceases on the third or fourth day, and in some cases

the discharge ceases for a day or so during the menstrual period, and then returns in intermitting gushes.

Treatment.—To cure congestive dysmenorrhœa we must, in the first instance, cure the abnormal uterine condition or hyperæmia of which the menstrual difficulty is symptomatic by those measures that have been fully described in my previous communication on endometritis. In all cases such as these, warm hip-baths and hot-water irrigations (per rectum et vaginam) are generally serviceable in the immediate relief of the catamenial pain, as in the same way are also the various time-honoured and well-known special uterine and general nerve sedatives and stimulants, such as castor, guaiacum, &c., to the use of which I need not here further allude. In the general treatment of congestive dysmenorrhœa it is of special importance to relieve abdominal and pelvic visceral congestion as far as possible by saline purgatives, such as a teaspoonful of Carlsbad or Glauber's salts in a half tumblerful of hot water once or twice a day; and with the same object of diminishing as far as possible the hyperæmia of these and other organs, nothing appears to me more generally serviceable in such cases than the free use of bichloride of mercury with iodide of potassium and bark.

In such cases local treatment must always be conjoined with the general remedies just referred to. In many instances, to unlock the uterine hyperæmia, free scarification of the cervix, followed by the glycerine tampon and hot-water irrigations, if persevered in for some time will prove effectual, and should be fairly tried in the first instance. In some cases, however, it will also be found necessary to resort to intra-uterine treatment by the dilatation of the cervical canal and the subsequent employment of the curette, by the use of which the diseased endometrium may be scraped away, whilst by the ensuing hæmorrhagic discharge the local congestion may most directly be dealt with.

Probably no one who has read my previous communication on the subject of obstructive dysmenorrhœa will accuse me of any tendency to minimise the importance of mechanical and operative treatment in such cases. But, at the same time, I am bound to observe that these methods are frequently pushed to an undue extent by practitioners who apparently ignore the fact that, common as is the obviously obstructive form of dysmenorrhœa, this complaint may also occur in cases and from causes beyond direct or mechanical treatment of this

kind—viz., as the result of ovarian or Fallopian tube disease, or as the consequence of a constitutional, neurotic, or hyperæsthetic condition, which may be best treated by attention to the general health of the patient. In the latter cases the most signal benefits are often derivable from the free use of nerve tonics, such as the preparations of valerian and its combinations, and more especially the valerianates of quinine and iron, together with bromides of sodium or potassium as nerve sedatives; and, if necessary, as a temporary measure, to allay extreme dysmenorrhoeal pain, opiates and cannabis indica, which, in such cases, may be most advantageously given by the rectum rather than by the mouth or hypodermically. This fact is one of such practical importance, and is so generally neglected at the present day, that I may here cite the forcible terms in which it was stated in a paper “On the right use of Sedatives in Diseases of the Womb,” published in the *Lancet* many years ago by Dr. Tilt, whose views on that subject are identical with my own experience. “He must indeed be young in practice,” says the writer just named, “who is not aware how frequently pain and neuralgia, under various forms, appear as an important symptom of morbid menstruation, of diseases at the change of life, and of uterine and ovarian affections. Neuralgia in connection with the reproductive system is still more frequent in women of the upper classes, in whom a nervous temperament has been inherited and rendered more intense by injudicious schooling and by habits at variance with correct notions of hygiene. Suppose a patient suffering habitually from nervous uterine irritability, from bearing-down pains, vesical tenesmus, and severe pains in the sacrum and thighs, the necessity for sedatives will strike everyone. Most medical men will give them by the mouth, either in such moderate doses that the patient’s sufferings will be long in abating, or, should the quantity have been sufficient to assuage the pain, the drugs may have acted so strongly on the system that it would take some days to recover from the poisonous effects. Afraid of this, others would apply sedatives to the pelvic regions or loins; but before relief could be given much time must elapse, though, if the fomentations had been associated with sedative injections into the rectum, relief would soon be afforded, without any subsequent ill effects, because the remedy being applied directly to the diseased nerve the dose could be proportioned to the

intensity of the pain. Is it not, then, better to give sedatives by the rectum than to have a patient in an habitual state of suffering, or with the occasional variation of an overdose of opium? This is applying the remedy in the right place, or applying the sedative as near as possible to the suffering nerves."

Nervous or Spasmodic Dysmenorrhœa.—In early menstrual life probably the most frequent form of dysmenorrhœa is that described as neurotic or spasmodic, and, moreover, in every variety of this complaint, and at every age at which it may occur, the neurotic element to a large extent complicates whatever other cause painful menstruation may be dependent on; and hence the brief account which I have already given of the ordinary symptoms and general palliative treatment of dysmenorrhœal pain may be also applied to the nervous or neuralgic types of this affection.

In speaking of spasmodic dysmenorrhœa, Dr. Champneys institutes an analogy between the phenomena of asthma and the vaso-motor disturbances in the parts concerned in the causation of painful menstruation, which, in reference to structures and functions so widely dissimilar as those of the pulmonary and utero-ovarian organs, seems to me wholly untenable. The same writer makes another statement, viz.—“For if, as we have seen, the smallest cervical canal can transmit the menstrual fluid without sensible hindrance, much more can it admit the spermatozoa.” In this little “if,” however, lies the pith of this problem, for, in the first place, I for one deny that the smallest cervical canal can transmit the menstrual fluid without sensible hindrance, and, secondly, the comparison made between the viscid, or often shreddy or clotted, and *débris*-laden menstrual flux and the uniform opalescent and lubricating or semi-oleaginous seminal secretion can hardly be taken seriously. “It must be remembered,” he further observes, “that uterine colic is not associated with spasmodic contraction of the uterus, though it may be associated with a condition of tetanus without narrowing of the canal as in after-pains. The great remedy is pregnancy and parturition.”

If pregnancy and parturition, however, are not sufficient to ensure the multiparous patient against the common occurrence of after-pains, it may be fairly asked, how, in the name of common sense, can they remedy a tetanic condition of the uterus which is referred to as analogous to that giving rise to those after-pains? Admitting, however, that parturition at full

term may cure dysmenorrhœa, I cannot believe in the cure of dysmenorrhœa by impregnation unless continuing to full term, as I have observed that patients under such conditions who may have become pregnant are particularly liable to abort at what would have been a menstrual period had impregnation not occurred, and that the subsequent dysmenorrhœal troubles were thereby but intensified.

Membranous or Pseudo-membranous Dysmenorrhœa, to which attention was first called by Morgagni, who, upwards of a century ago, observed the periodical expulsion of membranous casts or shreds with the catamenial flux in cases of painful menstruation, has been and is yet very generally described as a distinct and special form of the complaint under consideration. This view appears to be quite erroneous, however—the common occurrence of such shreds or clots in the menstrual discharge of dysmenorrhœal patients having been clearly demonstrated by Dr. John Williams in his conclusive statistics. Moreover, as was long since shown by Oldham and again by Bernutz, whose remarks as bearing on this point may be here briefly recapitulated, these products, which are composed entirely of the histological elements of the uterine mucous membrane and ought consequently to be ascribed to a disturbance of the ordinary physiological moulting of which the generative organs become the seat at each catamenial period, are occasionally met with in typical instances of each one of the three forms of dysmenorrhœa—*i.e.*, obstructive, congestive, and neuralgic, as already described. Nor is the membranous expulsion of such importance as a cause of painful menstruation as is commonly supposed. On the contrary, as Bernutz observed, “The difficulty arises from the morbid condition of the attached uterine mucous membrane, especially the cervico-uterine portion of it.” “I willingly allow,” adds Bernutz, “that the dysmenorrhœal membrane floating about the cavity of the uterus may occasion temporary difficulty to the exit of the menstrual fluid (acting as a ball valve), just as a clot might do, but I do not believe it would give rise to so serious an obstruction as occurred in these cases, unless there co-existed defective dilatation of the cervico-uterine canal.” This view has not been displaced by any more recent observations, and in my own practice I have acted on it with advantage by dilating the cervical canal and curetting the endometrium in many instances of this kind.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

My Personal Experiences in Equatorial Africa as Medical Officer of the Emin Pasha Relief Expedition. By THOMAS HEAZLE PARKE, Hon. D. C. L. (Durh.); Hon. Fellow, Royal College of Surgeons, Ireland; Fellow Royal Scottish Geographical Society; Hon. Member of the Geographical Societies of Belgium and Antwerp; Corresponding Member of the Tyneside Geographical Society; Hon. Associate of the Order of the Hospital of St. John of Jerusalem, &c., &c.; Army Medical Staff. With Maps and numerous Illustrations. London: Sampson Low, Marston, & Company, Limited. 1891. 8vo. Pp. 526.

WE have read this book from cover to cover, and the impressions left upon our mind are that never was there a more Quixotic enterprise undertaken than the “Emin Pasha Relief Expedition;” never was there a more worthless object of national solicitude than the easy-going, weak-minded, vacillating Emin Pasha in question; and never was there a more conspicuous example of British pluck and endurance than that shown by the officers who took part in the expedition, including the author of the work before us, of whom the profession of medicine may well be proud.

“To my parents, many of whose most anxious hours have been associated with the interior of the Dark Continent, I now dedicate this diary, kept during my wanderings in its mazes,” so runs Dr. Parke’s dedication of his book, fitly expressing the filial love and duty of a high-minded, chivalrous Irish gentleman.

The work, which is splendidly brought out by the well-known publishing firm of Messrs. Sampson Low, Marston & Company, of St. Dunstan’s House, Fetter-lane, Fleet-street, London, E.C., contains the journal which Dr. Parke kept in his African note-books during the period of his connection with the Emin Pasha Relief Expedition—namely, from January 28, 1887, to January 16, 1890—as nearly as possible three years. And what a record it is!—of wanderings on foot through dense African forests, dismal swamps, and burning prairies, for 5,000 miles; of lengthened

periods of starvation; of battle and ambush; of still more deadly struggles against disease and death. To us, as we read this book, the wonder is that even one of its many heroes should have survived to tell the tale of wanderings with which the *Odyssey* cannot compare.

To a large extent, this work is supplementary to Mr. Stanley's "*Darkest Africa*." Like it, indeed, its pages contain an account of the entire course of the expedition.

But, besides this, much medical and scientific lore is enshrined in its pages, and for the first time we read of the unparalleled sufferings of Captain Nelson and Dr. Parke at the Arab village of Ipoto, where they were maltreated by the Manyema, or "Ivory Hunters," during a stay of rather more than three months (from October 18, 1887—St. Luke's Day—to January 25, 1888). Several chapters also are devoted to a description of life at Fort Bodo, where Lieutenant Stairs, Captain Nelson, R.N., and Surgeon Parke encamped from June 8, 1888, to December 20, 1888, while Mr. Stanley returned to Yambuya in search of the ill-fated rear column, which had been left behind in the entrenched camp at that place, under the command of Major Barttelot and Mr. Jameson. Our readers will remember the tragical end of both these officers. Barttelot was shot on the 19th of June, 1888, at Banalya, by a chief, for interfering with his wife, who was singing at 5 a.m. Jameson died at Bangala on August 17, 1888, after suffering for eight days from a hæmorrhagic fever. After these catastrophes Mr. Bonny, who had joined the rear column on August 14, 1887, assumed command until he was relieved by Mr. Stanley.

Dr. Parke pays the following tribute to the memories of Barttelot and Jameson:—

"My ill-fated friend, Major Barttelot, who was the direct agent of my introduction to the Expedition, was one of my brightest and pleasantest companions during the early months of its course. Although possessed of a rather ungovernable temper, he was always a very jolly comrade, when not depressed or irritated by the effects of sickness or worry; and the only thing which tended to neutralise his usefulness in the post assigned to him by Mr. Stanley was his pronounced antipathy to the black man. Had he been more fortunate in his choice, and not joined our Expedition, his energy and undoubted bravery would probably have secured for him a brilliant soldierly career. The only other white officer who lost his life on the Expedition, Mr. Jameson, was always quiet, most

gentle, cheerful, and amiable to a degree. He was continually referring in the most affectionate terms to his home ties, and saying to each of us what a pleasant time we would have in his villa on the Thames, when the trials and troubles of the rescue of Emin Pasha were all well over. I entirely disbelieve that James Sligo Jameson was capable of any act of deliberate cruelty. Although his own letter is compromising, yet its candour is significant. It is a maxim to speak only well of the dead, and to leave untouched all that is unpleasant concerning them; but of Jameson I never knew but good." (Pages 509, 510).

A characteristic feature in the book is an occasional dissertation on some scientific or medical topic. For example, we have, in Chapter IX., a study of bacteriology, and subsequently less elaborate treatises on various methods of preparing castor oil, massage, entozoa, including guinea-worms; African fever, wounds, a report on the arrow-poison of the pigmies, water supply, analysis of the water of the "Salt Lake" at Katwé, by Sir Charles A. Cameron, of Dublin; hæmaturic fever, and gangrenous ulcers. Katwé is a settlement on the Muta Nzigé Lake (Albert Edward Nyanza), and the Salt Lake of Mkiyo is situated a few hundred yards from its western margin. This curious lake is only a few feet in depth. It does not possess any effluent stream—consequently its waters are extremely rich in saline matter. From the bottom of the lake great numbers of pinkish crystalline salt-slabs are taken, and bartered throughout many surrounding countries. The water of the lake itself has a pink tint throughout. It is pure brine, of a much higher specific gravity (1,274 compared with water 1,000, and Dead Sea water, 1,170 or thereabouts) than sea-water. The margin of the lake is strewn with dead butterflies and animals which came to drink, and drank and died.

Within the limits of a brief review, we can notice but a few of the many interesting points in this book. And first, our hero's promptness and decision of character are stereotyped in his telegraphic reply to Mr. Stanley asking whether he would join the Emin Pasha Relief Expedition—"Certainly. Coming to Cairo to-night." Stanley's telegram reached Parke when the latter was dining with a party at the Khedivial Club, Alexandria, the hour being 9 45 p.m. The same night he left for Cairo, having previously transferred the responsibilities of the Alexandrian Fox Hunt, of which he had been elected "Master" in 1886. Parke had heard of the intended expedition from Major Barttelot a few days before, and on inquiring of him who Emin was, Barttelot

replied that he was "some chap who wanted to get out of Africa, and couldn't." It would have been nearer the truth to have said, "some chap whom they wanted to get out of Africa, but he wouldn't."

On the voyage from Aden to Cape Town, with 700 souls on board, a case of confluent smallpox occurred the day after the steamer left Aden. Parke acted with characteristic promptness, had the patient immediately removed to one of the boats swung above the bulwarks, where he was perfectly isolated, and vaccinated all the Europeans and other members of the expedition—excepting one European, who was an anti-vaccinationist (his name is not given). No case after the original one developed pronounced symptoms of smallpox—surely, a wonderful result under the circumstances.

At page 208, Dr. Parke describes the gangrenous ulcers which caused so much suffering to the members of the expedition while on the march through the African forest:—

"When the resistance of the tissues," he writes, "has been reduced to a certain (low) level, every slight abrasion of the skin refuses to heal—especially if on the legs—and becomes the centre of a spreading sore."

Having alluded to the fact that the worst of these ulcers were distinctly traceable to direct infection and irritation by the bites of flies, he goes on to say—

"A bulla is sometimes seen to form on the infected spot, which—in the vast majority of the worst cases—is below the knee; this is filled with a dark-red serous fluid, and soon breaks, leaving a ragged sloughy surface exposed. From this starting-point, the sloughing process, in the cases of those individuals who have previously been greatly reduced by starvation, spreads with appalling rapidity; and destroys the various tissues in the unsparing way that hospital gangrene is known to do. The edges are livid in colour, and horribly ragged in outline and texture; the tissues beyond them are infiltrated, and 'boggy' to the touch. The subcutaneous and muscular tissues yield most readily; so that, after a time, shreds of tendon and edges of aponeurotic sheaths are seen lying across the floor and sides of the ulcer, and sometimes trail the ground; the nerves and vessels are treated with greater respect for some time, so that they are completely dissected out, and may be identified in their proper anatomical positions; but by-and-bye they, in their turn, also yield. The ensheathing membrane of the bones is afterwards laid bare, and shares in the necrobiotic change; and, as an inevitable result, the superficial layers of osseous tissue perish, and undergo exfoliation. . . .

The loss of vascularity occasioned by the coagulation of the blood in the surrounding vessels, gave the whole of the eroded surface an ashen-grey appearance, as if all colouring matter had been removed from the tissues by a very crude process of bleaching. But high above all the signs and symptoms of the ulcer of the Emin Pasha Relief Expedition, towers that characteristic smell which is invariably present—not only to the sufferers and their medical attendant, but to every individual member of our force, and to every white officer, whether in camp or on the march—one, the memory of which will, I think, always remain with me on this side of eternity!”

This passage illustrates one of the difficulties Dr. Parke had to contend with in writing a popular work into which medical practice was bound to intrude. On the whole, we think he has fairly acquitted himself while treading upon somewhat delicate ground. He is not quite so happy when on two occasions he indulges in a very laudatory and deserved commendation of the medical preparations of a well-known and justly renowned firm of pharmaceutical chemists. Surely one expression of approval would have sufficed even in a purely medical work—a footnote would have sufficed in the work before us.

At page 254 a novel condiment is described. It is called *nous-soir*, and consists of ants pounded and cooked. The most palatable variety is that prepared from white ants, which is eaten as a *kitawayo* (condiment), tasting somewhat like caviare.

On more than one occasion poor Parke suffered from a most dangerous form of malarial poisoning—bilious remittent hæmaturic fever. He mentions (at pages 288 and 289) that, whereas large doses of quinine—up to 90 grains daily—failed to check the fever (104° F.), it readily yielded to arsenic. “My fever,” he writes under date Oct. 27, 1888, “is diminishing. I take six tabloids of arsenic daily ($\frac{1}{50}$ of a grain in each), and my temperature has not gone above 100° F. since I took to this medicine.” Dr. Parke is generally accurate in his descriptions of disease, but we observe a decided slip in his account of a case of Bell’s palsy, at page 454, in which he says “*the ptosis is well-marked.*” In connection with the same case, he states that the patient had slight aphasia, a sequela of very high fever, from which he had also been suffering. He was one of the strongest men in the expedition, and Dr. Parke suspected that he got an attack of sunstroke—superimposed on his fever. The symptoms of sunstroke on the presence of which Parke lays stress are—extremely high tempera-

ture, paralysis of the limbs, and slight aphasia. He has little doubt that the remarkable immunity of the members of the expedition from sunstroke should be attributed in part to the fact that the heads of the carriers were always protected by their loads during the march. "But," he adds, "I do not by any means think that their safety was altogether due to this. As a matter of fact, I have seen more cases of sunstroke in one day at Aldershot, than I have ever met with in the whole course of my seven years' African experience, including the Egyptian war of 1882, and the Nile campaign of 1884-85—although in the latter I went as far south as Metammeh—within sixty miles or so of Khartoum. *Drink* is certainly the most powerful predisposing cause of the development of the symptoms of sunstroke." (Pages 455 and 456).

One of the most important chapters in the book is the sixteenth, which contains a full account of the deadly arrow-poison of the pigmies. With the aid of Mr. E. M. Holmes, F.L.S., the curator of the museum of the "Pharmaceutical Society of Great Britain," Parke was able to present an interesting report on the arrow-poison to that society, on Wednesday, April 8, 1891. From the examination made by Mr. Holmes of specimens of bark, large green leaves, a thorny creeper, a green stem and leaf, and seeds, all brought home by Surgeon Parke, it is obvious that in this arrow-poison the two chief active ingredients are erythrophlœin and strychnin. When *Erythrophlœum* is in excess in the poison, muscular relaxation is the prominent symptom; when *Strychnos* forms the principal ingredient, tetanic symptoms are present. Of all the men wounded by poisoned arrows at the action of Avisibba only one survived—viz., Licut. Stairs, and his recovery was probably due to the fact that the poison was immediately sucked from the wound. The importance, in the interests of humanity, of ascertaining the composition of the poison and of learning the nature of the antidote used by the pigmies, accordingly admits of no doubt. A white powder used as an antidote was examined by Sir Charles Cameron, of Dublin, and proved to consist simply of wood ashes. It is "an alkaline material containing carbonate of potassium, chloride (? chlorate) of potassium, and carbonate and phosphate of calcium. It is, of course, a caustic and antacid."

As the action of both erythrophlœin and strychnin is known, Mr. Holmes points out that it is by no means impossible that a physiological antidote could be provided for these poisons.

The closing episodes of Parke's adventurous story are told in quite a dramatic style. "Having crossed the African continent from west to east, we arrived at Bagamoyo" [the port on the mainland opposite to Zanzibar] "on the 4th of December, 1889. The sight of the broad expanse of ocean called forth shrieks of joy from our impulsive Zanzibaris, which proved sufficiently infectious to be taken up even by the stolid, lazy, good-for-nothing Egyptians. My own eyes were not in good enough condition to enjoy the sight so much as I could have wished, but I felt, perhaps, nearly as much as any. The bitterness of death was past, our slow and weary pilgrimage had drawn to a close!"

This passage reminds us of Xenophon's description of the enthusiasm with which the first view of the Black Sea inspired the retreating troops of the expedition of Cyrus:—"Καὶ τάχα δὴ ἀκούουσι βοώντων τῶν στρατιωτῶν, θάλαττα, θάλαττα, καὶ παρεγγυώντων. Ἐνθα δὴ ἔθεον ἅπαντες καὶ οἱ ὀπισθοφύλακες, καὶ τὰ ὑποζύγια ἡλαύνετο καὶ οἱ ἵπποι. Ἐπεὶ δὲ ἀφίκοντο πάντες ἐπὶ τὸ ἄκρον, ἐνταῦθα δὴ περιέβαλλον ἀλλήλους, καὶ στρατηγούς, καὶ λοχαγούς δακρύνοντες. Καὶ ἐξαπλῆνς, ὅτου δὴ παρεγγυήσαντος, οἱ στρατιῶται φέρουσι λίθους καὶ ποιοῦσι κολωνὸν μέγαν."—(Xenophon's *Anabasis of Cyrus*, Book IV., chapter 7). "And very soon they hear the soldiers shouting out 'The Sea! The Sea!' and passing the word on to the rest to come on. Thereupon they all, even the rearguard, began to run, and the beasts of burden and the horses were driven on. But when they had all reached the summit, then they burst into tears and embraced one another—generals and captains alike. And on a sudden, at the suggestion of some one or other, the soldiers pile up a great heap of stones."

But Parke's troubles were not over when he reached the seaport, Bagamoyo. On the very evening of the arrival there Emin Pasha met with an accident which nearly cost him his life and certainly predisposed Parke himself to an illness which placed his life too in imminent danger. Let us tell the story in Parke's own words:—

"The local magnates, vice-consuls, &c. (English, Germans, and Italians), welcomed us, and the Germans entertained us in the evening with the object of doing honour to the long lost Pasha and the hero of his rescue. A brilliant congratulatory speech was made by Major Wissman, to which Mr. Stanley replied; and Emin Pasha expressed his grateful appreciation of what had been done for him by Mr. Stanley and ourselves, as the representatives of British philanthropy, in an eloquent and highly-finished discourse. All went merry as a marriage bell.

After this speech he walked round to the back of my chair, full of spirits, spoke something in my ear, and strolled, evidently in an absent and contemplative mood, through a doorway towards the window of an adjoining room. He had occupied one-story dwellings only, for a period of fourteen years: it was not a time for sudden inquiry, or suspicion of novelty; and, being excessively short-sighted, he simply walked through and was precipitated to the ground, a distance of about eighteen or twenty feet. . . . The fall produced immediate unconsciousness. A couple of his ribs were fractured. His eyes were bruised, and the lids very much swollen, as he had fallen partly on his face; and there was extensive subconjunctival, as well as subcutaneous ecchymosis. Blood oozed from both ears; so that, although I would fain think otherwise, there was much to say in favour of the diagnosis of extensive fracture of the base of the skull. He remained perfectly comatose for a period of nearly five hours, and the first word which he uttered on partial recovery of the power of articulation, was 'Parke.'

There can be no doubt from the history of the case that Emin Pasha owed his life on this occasion to the skill and care of his medical attendants, Dr. Brehme, of the German Hospital at Bagamoyo, and Surgeon Parke.

After three weeks' attendance on Emin Pasha, Parke was himself suddenly struck down with an attack of malarial (hæmaturic) fever, which rapidly assumed an extremely malignant type. He was conveyed to the French Hospital at Zanzibar, where he was placed under the care of Dr. Charlesworth. So ill was he that Dr. Charlesworth lost all hopes of his recovery, and on one night, when the patient was at the worst, he summoned Mr. Stanley and his brother-officers of the expedition to see him breathe his last. Stanley, with characteristic authority, after being in the sick-room for a couple of minutes, went over to the window and opened it. Prostrate as he was, Parke was conscious, and felt, he says, deeply grateful to Stanley for his action on that occasion. During this terrible illness he practically lived on iced champagne, and his sense of taste was never so completely benumbed as to prevent him appreciating this beverage. "After three long years of indulgence in the sipping of stagnant, fetid, tepid, typho-malarial African water, the promotion to the enjoyment of such nectar as this was almost worth the illness which confined me to its use."

When his leader and companions were leaving Zanzibar for Cairo, the convalescent, poorly though he still was, would not be left behind, and so finally the whole party—with the exception of

the vacillating Emin Pasha—arrived at Cairo on the 16th of January, 1890. On the 7th of the following April, Stanley and Parke started from Cairo for Alexandria, where they embarked for Brindisi on their homeward journey on the evening of the same day.

In concluding this notice, we have a warrantable pride in reflecting that it was an Irishman—an Irish physician and surgeon—who through three eventful years played a hero's part, and by his undaunted courage, intrepidity, humanity, and skill, shed a fresh lustre upon the medical profession.

J. W. MOORE.

Leprosy. By GEORGE THIN, M.D. London: Percival & Co. 1891. Pp. 280.

DR. THIN has published this excellent work at a most opportune time. The interest taken in Leprosy has considerably increased of late years, and a very large amount of work in connection with this subject has been recorded in various journals and societies, but no complete work treating of the subject as a whole has appeared for many years. Dr. Thin now gives us a clear and full account of leprosy from the earliest historic ages to the present time, and we warmly congratulate him on having produced a standard English text-book on such an important subject.

The history of the disease is fully described. The Mosaic references to leprosy are discussed. Dr. Thin considers that the Biblical "leprosy" was the same disease that we now know by that name, but seems to think that many cases of other skin diseases—*e.g.*, leucoderma—were confounded with it by the Jews. We may remark, in passing, that Dr. Thin believes that Job's disease was leprosy. The author shows how prevalent this disease was all over Europe during the middle ages, and how rapidly it diminished and disappeared in many of the countries where it had formerly been most abundant, this diminution being simultaneous with the adoption of strict measures for the isolation of lepers from the general population.

The present geographical distribution of leprosy is described; and a most instructive map of the world is inserted as frontispiece to the book, in which leprous districts are coloured red, the degree of colour representing the intensity of the disease in each locality.

After a full description of the various varieties of leprosy, Dr. Thin discusses its pathology. He holds most fully the bacillary origin of the disease. "The pathology of leprosy simply expresses

the kind and amount of destruction produced by the direct action of the bacilli in certain parts of the body, more particularly in the cutis and in the mucous membranes, and on the tropho-neurotic changes consequent on the destruction of nerves by the special elective affinity of this organism for nerve-trunks. To these changes may probably be added, in the second rank, certain secondary processes of degeneration produced by the wasting effects of the disease in its later stages, and certain erythemas, probably produced by the action on blood-vessels of a poison set free by the growth of the bacillus."

With regard to the position of the bacilli in the living tissue, Dr. Thin is convinced they are enclosed in cells—in fact, he goes so far as to say that there is no evidence that the bacilli can live and multiply except in cells. He thus differs completely from Unna, who holds that the bacilli live, not in cells, but free in the tissues, and believes that the appearance of cells is due to the fact that the bacilli live in colonies and exude a glia.

These bacilli exist in enormous numbers in the affected skin. "In well-developed cases the corium may be rightly considered as being almost composed of masses of bacilli. When we consider the extent to which the integument is sometimes involved in tubercular leprosy, it is almost appalling to think how much of the actual specific weight of the individual must be due to the parasites he carries about with him."

As regards the mode of propagation of the disease, Dr. Thin believes it is contagious, and always spread from person to person. The fact of the bacillus suggests, though it does not prove, contagion. Leprosy has always spread in connection with previously existing foci. Wherever lepers have gone, there leprosy has developed, unaffected by differences of climate, food, soil, or habits. Many cases are on record in which a healthy person in association with lepers became leprous. If this occurs in a leprous country not much is proved, because the person might be said to have caught leprosy in some other way than by contagion; but if such occurrences are recorded in non-leprous countries, they go far to prove that leprosy is contagious; and several such cases have been recorded. Dr. Thin lays much stress on Dr. Hawtrey Benson's case of a man who contracted leprosy in the West Indies and then returned to Dublin, where he lived in close association with his brother. After some time this brother, who had never been in a leprous country, contracted the disease. Many other similar cases

are quoted, but none so convincing as this one. In the heredity of leprosy Dr. Thin entirely disbelieves.

There is an important chapter on the isolation of lepers. "The tendency of mankind in all ages and in all countries appears to have been to segregate lepers." In the middle ages lepers were most rigidly isolated. We read how the Church considered the leper as dead, and how the burial service was performed over him on the day when he was confined in a leper house. The thoroughness of isolation gradually lessened until recent years, when again more stringent regulations against leprosy have been adopted. Acts for the compulsory isolation of lepers have within the past ten years been passed in Norway, Australia, and elsewhere. Dr. Thin believes that judicious and careful isolation will probably succeed in checking the disease in a country.

There are other good chapters on treatment, on diagnosis—an important subject even in the British Islands, for occasionally persons, home from leprosy countries, affected themselves with leprosy, but ignorant of their disease, require to have their state diagnosticated—on prophylaxis, and on other subjects, which do not call for extended notice here.

The work is illustrated by three photographs—one of the bacilli and the others of tubercular leprosy and of nerve leprosy. Our only fault with the book is that there are not enough of these illustrations. Photographs or plates illustrating the various manifestations and varieties of the disease would have been a valuable addition to the work. In the case of a rare disease, it is always much easier to get an idea of its appearances from a plate than from a verbal description. We hope that the author may see his way more fully to illustrate his next edition.

We cannot conclude this review without again congratulating Dr. Thin on the excellence of the work he has produced.

On Harelip and Cleft Palate. By WILLIAM ROSE, M.B., B.S., Lond., F.R.C.S. London: H. K. Lewis. 1891. Pp. 158.

SEVENTY pages of this book are devoted to a study of the development, and an account of the varieties, of harelip and cleft palate, with chapters on the anatomy and physiology of the normal and abnormal palate and lip. These pages are interesting and suggestive, and they well repay perusal. The remaining pages deal with the operative treatment of the affec-

tions noted, and end with short chapters on obturators, syphilitic affections of the palate, and rectal anæsthesia.

The chapters on operative treatment afford ample proof of the writer's wide experience in this department of surgery. The monograph is exhaustive without being prolix, and one can see at a glance that Mr. Rose is thoroughly familiar with every procedure he describes and recommends, and that the minutiae on which the successful performance of palatine operations depend are distinctly set forth.

The work is a fitting outcome of the teaching of the late Sir W. Fergusson, to whom the author is indebted for much of his experience, having acted as his assistant for many years; and we are not saying too much in concluding with the remark, that every surgeon interested in this subject should read the monograph under review.

Massage and the Swedish Movements : their application to various Diseases of the Body. By KURRE W. OSTROM, from the Royal University of Upsala, Sweden; Instructor in Massage and Swedish Movements in the Philadelphia Polyclinic, &c. Second Edition. London: H. K. Lewis. 1892. Pp. 143.

IN this little book we have a description of various movements and manipulations, fully illustrated by 87 diagrams. The descriptions are fairly clear, and the diagrams instructive. They will probably be found useful by those who are studying the art of massage.

At the same time, we think that a very unnecessary amount of complexity has been given to the whole subject by too great multiplication of details, and by attaching undue importance to trifles; and also by excessive nomenclature, especially in the section on Swedish movements. Thus we have the side-flex-standing, the before-bent-standing, and the stoop-curve-standing positions; we have also the sit-lying, and the crook-half-lying positions. We think the matter would be made much more intelligible if, instead of isolated descriptions of every single manœuvre and position, a more general account was given of the principles on which the whole method is based, and from which the individual positions, &c., could be derived. This is the chief fault we see in this work—viz., excess of detail and deficiency of general principles.

The last part of the work gives a list of most of the ordinary diseases with the manipulations most suitable for each.

Although we believe in massage, we cannot go quite as far in our faith as Dr. Ostrom does. We cannot, for example, see how the rectum can be acted on by turning the patient on his face and performing firm beating of the sacrum in circles (p. 38); neither do we believe in massage of the spleen when normal in size.

A Practical Treatise on Diseases of the Skin. By H. G. PIFFARD, M.D., assisted by R. M. FULLER, M.D. London: H. K. Lewis, 1891.

DR. PIFFARD is well known as an active worker in Dermatology, and he has freely contributed to the literature of his favourite subject. He has now brought out a splendid quarto volume which is essentially a photographic Atlas of Diseases of the Skin with accompanying letterpress.

Of the text little need be said, for the author expressly limits himself to presenting the subject in a practical manner and in few words. Although two or three microphotographs of morbid histology are inserted, all other reference to the minute pathology of the skin is intentionally omitted, on the ground that this branch is still in such an undeveloped condition.

In the sections upon treatment we may note a few points.

In the local treatment of eczema Dr. Piffard thinks highly of "black wash" double the strength of the officinal preparation. "Of still greater value during the first and second stages is the solution of the peroxide of hydrogen. The commercial article usually contains 12 volumes (*sic!*) of the peroxide, and is too strong to apply in many cases of eczema, and may require dilution with one or two parts of water or even more. The effect of this solution in many cases appears almost magical, reducing the purulent exudation, and hastening the formation of a new epidermis."

For pediculi capitis he knows of nothing more effective for the destruction of these pests than "drowning them out with ordinary kerosene."

In syphilitic necrosis of bones he considers that gold "unquestionably hastens the separation of the sequestrum by promptly determining the line of demarcation between the healthy and the diseased tissues. A grain of the chloride of gold, or two

grains of the chloride of gold and sodium, may be dissolved in an ounce of water, and 5–10 drops be given once or twice a day."

For eczema of the anus he recommends *graphite* ointment—a novel recommendation, and intelligible only as a protective.

The illustrations embrace 50 full-page plates and 33 smaller illustrations. The large photographs were made by the author with the aid of artificial light, which his experience leads him to prefer for this purpose to ordinary daylight. The negatives for the smaller illustrations were in part executed by the author, and in part by a professional photographer. As examples of photographic art we may at once say that many of the plates are of decided excellence, and some of them faithfully recall the clinical features of the disease they are intended to portray. But we do not consider that by photography alone, especially when uncoloured, a really useful and practical Atlas of Diseases of the Skin can be produced.

Comparatively few affections—*e.g.*, alopecia areata, leucoderma, and ichthyosis, lend themselves readily to this mode of illustration. Most other skin affections demand the aid of colour, and of careful colouring, if we wish to obtain pictures of much service for reference or comparison. Mere accuracy of outline alone is far from sufficient. The smaller plates are all named, whereas the large plates are only numbered, the reference numbers being appended to each descriptive article.

The Medical Annual and Practitioner's Index. 1892. Tenth Year. Bristol: John Wright & Co. 1892. 8vo. Pp. 784.

DURING the past ten years this "hardy Annual" has been steadily winning its way into public favour, and now it commands a circulation of not less than 10,000 copies a year. Printed in clear type on excellent paper, the subject matter of the work is contributed by the leaders of medical and surgical thought and practice in their several departments. Neither trouble nor expense has been spared in making the undertaking a success, and we know of no other year-book which contains such varied and valuable information.

In previous notices we have sufficiently indicated the plan and scope of this work. In the volume before us, the articles which are likely to attract most attention are those by Dr. M.

Armand Ruffer on "Recent Advances in Bacteriology;" Mr. Andrew Pringle on "Medical Photography;" Mr. Wm. Thorburn on "The Surgery of the Spinal Cord;" Dr. Colcott Fox, a series of short articles on different "Skin Diseases," and Dr. R. Shingleton Smith, on "Phthisis."

We should not omit to mention that the "Annual" is beautifully illustrated with coloured plates, photographs, and numerous woodcuts and engravings. It also contains the usual collateral information relative to medical institutions, publications, and societies.

The Year Book of Treatment for 1892: a Critical Review for Practitioners of Medicine and Surgery. Cassell & Company, Limited: London, Paris, and Melbourne. 1882.

THE present volume of this popular Year Book is slightly larger than its predecessor of 1891; and we also notice that Dr. M. Handfield Jones and Mr. J. Ernest Lane are added to the list of contributors.

For the first time the Annual contains a "Selected List of New Books, new Editions, and Translations."

We would suggest that Spanish works be added to the list, and that American publications be separated from British ones.

The changes we indicate could, with the aid of the "Index Medicus," be easily carried out.

These suggestions are not made in the spirit of fault-finding, but are rather promoted by the desire to still further add to the value of an Annual that has deservedly become a favourite with the medical profession, and is what it purports to be—a concise epitome of the chief articles of the year.

The Middlesex Hospital: Reports of the Medical, Surgical, and Pathological Registrars for the Year 1890. London: H. K. Lewis. 1891. Pp. 333.

A HOSPITAL Report for 1890 belongs to ancient history at this time of day; and we do not propose to notice the volume at any length. It is a carefully compiled record of an institution in which, during the year, 3,356 patients were treated, with a mortality of little over 10 per cent. Separate Reports are, as usual, contributed by the Medical, Surgical, and Pathological

Registrars. From the first of these we learn that the 1890 epidemic of enteric fever was a mild one, only 19 cases being treated in this hospital. The death-rate was 10·5 per cent. Most cases were admitted in October and November. Three of the patients were over 40 years of age. "There was a history of exposure to sewer-gas in 6 cases." Thirty-eight cases of influenza were admitted—most of them in January, none after April; 1,500 cases were treated as out-patients. Only one in-patient died—of "severe bronchitis, prostration, and cyanosis." A summary and details of cases from the gynæcological ward is appended. There were 35 operations, of which 5 were fatal. Thirty-four operations of similar character were performed in the surgical wards, with 9 deaths; besides 5 cases (with one death) in which laparotomy was performed without removal of uterus or appendages.

Consumption : How to Prevent it, and How to Live with it. By N. S. DAVIS, JUNR., A.M., M.D.; Professor of Principles and Practice of Medicine, Chicago Medical College, &c. Philadelphia and London: F. A. Davis. 1891. Pp. 143.

DR. DAVIS found it useful to give to his patients who were threatened or affected with consumption, a printed series of hygienic rules which they could study and digest at their leisure, and by which they could regulate their conduct and mode of life. From this code of rules the present volume has grown. It is therefore written for the public, and is intended to supplement the verbal directions of the doctor. It treats briefly of the nature of consumption, and of the means of preventing it—fresh air, out-door work, destruction of tuberculous sputum, &c. Dr. Davis then discusses at considerable length the effects which different climates and altitudes produce upon consumptives. This section is written primarily from an American point of view, but the best known European health-resorts are also mentioned. The description of American climates is good, and may be found useful by European physicians who may think of recommending a trial of Colorado or some other district in the United States. The rest of the book is taken up with such subjects as exercise, clothing, food, and stimulants. There is a short chapter on the general principles of medicinal treatment.

We are much pleased with the tone and spirit of this little book; it is singularly free from fads and nonsense. The advice given is

not too dogmatic; the author clearly recognises the fact that the same method of treatment will not suit every case, and that there is no specific for this disease. There is no attempt here to supersede the physician in charge of any case, the object rather is to educate the patient sufficiently to enable him to carry out his doctor's directions with more intelligence than heretofore.

We believe that this book will be found useful by many intelligent consumptives.

Inherited Consumption and its Remedial Management. By WILLIAM DALE, M.D. Lond.; M.R.C.P. Edin., &c. London: H. K. Lewis. 1891. Pp. 37.

THE title of this excellent little book does not quite convey a full enough idea of its scope. It really consists of a number of hints and directions as to the bringing up of children, whether strong or delicate, but, of course, most applicable to the delicate. It is intended mainly for the public—for the mothers and relatives of children—and is written perfectly clearly and distinctly. It contains directions as to diet, clothing, education, exercise, and other equally important topics.

We believe that the reading of this little book by mothers and those who have the care of children would prove to be a real advantage to the health of those under their charge.

Index-Catalogue of the Library of the Surgeon-General's Office, United States Army. Authors and Subjects. Volume XII. REGER-SHUTTLEWORTH. Washington: Government Printing Office. 1891. Quarto. Pp. 1,004.

UNDER date April 30, 1891, Dr. John S. Billings, Surgeon, United States Army, presents to General Charles Sutherland, Surgeon-General, United States Army, the twelfth volume of the magnificent Index-Catalogue of the Library of the Surgeon-General's Office.

This volume contains 20,251 author titles, representing 8,022 volumes and 18,090 pamphlets. It also includes 6,603 subject-titles of separate books and pamphlets and 18,956 titles of articles in periodicals. It carries us from "Reger" to "Shuttleworth."

So far as published up to the present, the Index-Catalogue

includes 137,578 author-titles, representing 66,855 volumes and 120,000 pamphlets, as well as 128,284 subject-titles of separate books and pamphlets, and 393,808 titles of articles in journals and periodicals.

These astonishing figures will show what an important work of reference the Index-Catalogue already is, even in its unfinished state.

The Watering Places of the Vosges. By HENRY W. WOLFF.
London: Longmans, Green, & Co. 1891. 8vo. Pp. 155.

IN a pleasant, chatty, popular style, the author of this book gives in its pages an impartial and instructive account of the watering places of the Vosges—Plombières, Contrexéville, Vittel, Martigny-les-Bains, Bourbonne-les-Bains, Luxeuil, Bains-les-Bains, Bussang, and the small spas of Alsace which lie on the German side—or as the French call it, the “*Alsatian*” side—of the Vosges.

The history of the *renaissance* of Plombières under the fostering care of the Emperor Napoleon III. is well told in the second chapter. It would probably have fared better with that hapless monarch, both personally and politically, had he never taken the “cure” at what Dr. Burney Yeo has styled “the Queen of watering places of the Vosges.” The Contrexéville doctors at all events, according to Mr. Wolff, firmly maintain that had Napoleon III. gone to Contrexéville instead of Plombières he would almost certainly have been cured, and then there might have been no 1870! There was, unfortunately, no suitable residence for him at Contrexéville. The solvent power exercised on uric acid and urate calculi by the weakly alkaline “Source Pavillon” of Contrexéville is well known. Sir Henry Thompson held that the stone, which eventually proved fatal to the French Emperor, had attained its unmanageable size through the deposition upon a kernel of urate not larger than a coffee-berry, of successive enclosing shells of alkaline salts derived from the strongly mineralised waters of Vichy—an accident which never happens with the weak waters of Contrexéville.

Our author’s accuracy and honesty of description are exemplified in his account of the last-named watering place, now so popular among our own countrymen. “Apart from its waters,” he says, “Contrexéville has but little to offer to visitors worth travelling for;” and again—“Enough has been said to show that, *although by no*

means a violently beautiful place (!), still Contrexéville has enough within its boundaries and surroundings to make a short stay tolerable." This is quite true—the Vosges mountains are miles away, and the village itself, set in the middle of a far stretching plain, is thoroughly uninteresting. "But the waters are singularly efficacious, and their efficacy will, like charity, cover a multitude of shortcomings."

Vittel, Martigny, Bourbonne-les-Bains, and Luxeuil are not so well known to English health-seekers as Plombières and Contrexéville. Hence Mr. Wolff's pleasant description of these watering places will be all the more acceptable. The "after-cure" at Bussang, a refreshing *reconstituant* spring, perched high in the Vosges mountains, is described in Chapter IX. The water contains small quantities of arseniate of iron and about $2\frac{1}{2}$ parts per 1,000 of free carbonic acid. Hence it is at once tonic and refreshing, and serves as a table water throughout France.

There are some literary eccentricities in Mr. Wolff's book, as when he writes, "Another almost speciality are the *sources savonneuses*" (page 10); "Of course the 'foule' of Germans have disappeared" (page 29); "where once stood a Roman castrum. Another Roman castrum was very near Bourbonne, at Châtillon" (page 88). "The place is therefore get-atable" (page 125). These blemishes will not, however, detract from the value of what is really an excellent guide to the watering places of the Vosges. A route-map serves as a frontispiece to the book, but an enlarged topographical map of the Vosges district would much enhance the usefulness of the work.

Selected Monographs. Raynaud's Two Essays on Local Asphyxia. Klebs and Crudeli on the Nature of Malaria. Marchiafava and Celli on the Origin of Melanæmia. Neugebauer on Spondylolisthesis. London: New Sydenham Society. 1888.

THE essays selected for publication in this volume are of general and special interest. Probably the one that will attract the largest circle of readers is the first. It deals with a subject of considerable interest in itself, and one, moreover, which throws light upon some hitherto obscure chapters in pathology. The papers relating to local asphyxia (symmetrical gangrene) are three in number—(a) Dr. Raynaud's original thesis, which was published in 1862; (b) his later researches, published in the

Archives Générales de Médecine, 1874; (c) an appendix by the translator, Dr. T. Barlow, containing reference to the chief additions made by others to the knowledge of the subject subsequently to the publication of Raynaud's memoirs.

The essays by Klebs and Tommasi-Crudeli, and by Marchiafava and Celli, deal with special pathological points of considerable interest. The concluding monograph, by Neugebauer, upon spondylolisthesis, illustrates a variety of pelvic deformity which previously was ill understood.

A Manual of Autopsies Designed for the Use of Hospitals for the Insane and other Public Institutions. By J. W. BLACKBURN, M.D.; Pathologist to the Government Hospital for the Insane, Washington, D. C. Illustrated. P. Blakiston, Son & Co., Philadelphia. 1892. Pp. 84.

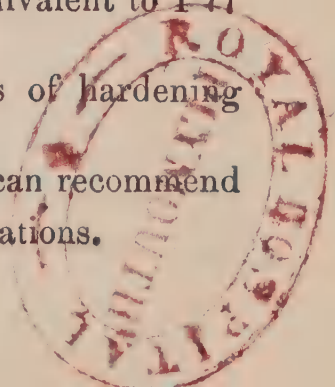
THIS book was written primarily for the use of the medical officers of lunatic asylums. Its object is to promote the adoption of a uniform system of reporting autopsies in these institutions, hence we find special attention is paid to the removal and examination of the brain. As well as this, however, a concise but clear account is given of the mode of examining the thoracic and abdominal cavities and their contents.

With regard to the dissection of the brain, the sections recommended by M. Pitrés are adopted with some slight modifications. These sections are vertical in direction, and are made at right angles to the long axis of the brain—*i. e.*, in the plane of the coronal suture. These sections are six in number, and are made through definite regions of the brain. We have, ourselves, tried this method of dissecting a brain, but we must confess we prefer the long horizontal sections which expose at once a much greater surface of the brain.

There is a table giving the average weights of the various organs, expressed both in ounces and in grammes. In this table we notice one curious point. A drachm is taken as being equivalent to 1.77 grammes—a serious mistake.

There is a useful chapter on the best methods of hardening tissues for microscopical purposes.

The work is carefully and well written, and we can recommend it to the notice of all who make *post-mortem* examinations.



PART III.

SPECIAL REPORTS.

REPORT ON THE PROGRESS OF SURGERY.

By R. GLASGOW PATTESON, M.B., Univ. Dubl.; Fellow and Member of the Court of Examiners, R.C.S.I.; Surgeon to St. Vincent's Hospital.

SYNOPSIS.

- I.—TREPHINING FOR THE RELIEF OF INTRA-CRANIAL PRESSURE.
- II.—INTRA-CRANIAL NEURECTOMY OF FIFTH NERVE.
- III.—TREPHINING FOR TRAUMATIC EPILEPSY.
- IV.—LIGATURE AND EXCISION OF INTERNAL JUGULAR VEIN.
- V.—ENUCLEATION IN THE TREATMENT OF GOITRE.
- VI.—TREATMENT OF SUPPURATIVE CHOLECYSTITIS.
- VII.—SURGICAL TREATMENT OF HEPATIC ABSCESS.
- VIII.—INTERMITTENT HYDRONEPHROSIS.
- IX.—SPINAL SURGERY : RECENT ADVANCES.
- X.—OPERATIVE TREATMENT OF SPASMODIC TORTICOLLIS.
- XI.—A NEW METHOD OF TENOTOMY.
- XII.—TUBERCULOSIS OF THE URINARY BLADDER.
- XIII.—TREATMENT OF TUBERCULOSIS OF BONES AND JOINTS.
- XIV.—GASTROSTOMY.

THE literature of surgery is one of such ever-changing and ever-widening nature that few months elapse without the addition of some new books or new editions which deserve more than a passing notice. Every new method of antisepsis or of surgical technique calls forth a host of miniature monographs and criticisms; so that with constant change and modification of its component parts the picture of surgical procedure is more kaleidoscopic in its nature than that of any other branch of medical science. And although every half year cannot be expected to bring forth some epoch-making advance in the theory or practice of our art, yet each month, as it passes by, leaves some new ideas either to be added to the storehouse of our

knowledge, or relegated to the lumber-room of our disappointments. The last few months have been rendered notable by the appearance of several books which reflect in some degree the present lustre of British Surgery. Notably Mr. Frederick Treves' "Manual of Operative Surgery," a splendid work in two beautifully got up volumes, marks its present high position and forms an admirable epitome for every worker in this field. Mr. Greig Smith's well-known work on "Abdominal Surgery" we welcome in a fourth edition—a fact which is sufficient testimony to its value and to the estimation in which it is held. Further, Messrs. Ballance and Edmunds, in a volume which is a veritable *edition de luxe*, have published the results of their long experimental labours, and have produced a work on "Ligation in Continuity" which is without a rival in any language; and Mr. Bland Sutton, in his "Surgical Diseases of the Ovaries and Fallopian Tubes," has produced one of the most striking and suggestive works, from a pathological and clinical standpoint, that has as yet appeared in connection with this branch of surgery. Other works might be referred to, but space, not the want of merit, compels us to pass them over in silence.

I.—TREPHINING FOR THE RELIEF OF INTRA-CRANIAL PRESSURE.

Possibly no subject in cerebral—or indeed present-day—surgery is of more interest or of greater practical importance than this, to which attention is called by a paper of Dr. Philip Knapp in the *Journal of Nervous and Mental Diseases*, February, 1892. So long ago as 1888, as Dr. Knapp points out, at the Congress of American Physicians and Surgeons, Weir suggested "the propriety of trephining to relieve symptoms in cases where the new growth was inaccessible or where its seat could not be determined." But it remained for Mr. Victor Horsley to urge the advantage of such a procedure for the relief of *pressure* only; and the six cases which he brought forward at the International Congress at Berlin in 1890, in which trephining had been performed with this object alone in view, constitute the first contribution to a subject which is now attracting widespread attention. So that the credit of trephining with the *definite idea of relieving pressure and that alone* does rightly belong to Horsley and not to Weir, whose idea embraced the relief of other symptoms as well. Dr. Knapp admits that Horsley's six cases and his own, here recorded, are the only ones in

which this was the primary object of the operation. Dr Knapp's case was that of a man, aged twenty-eight, who at the age of seventeen months suffered from an anterior cornual myelitis, which left permanent paralysis and atrophy of the left leg. Up to the time at which he came under observation his health had been fairly good; for some years he had suffered from indigestion and constipation, with occasional dull headache; but about six months previously the headache increased in frequency, became referred to the right occipital region and much more severe, at times compelling him to lie up. At about the same time he began to suffer from dimness of vision and diplopia; the pupils reacted normally; the fields of vision and the movements of the globe were unimpaired; but there was pronounced papillitis in both eyes, more striking and advanced in the right. His symptoms now were as follows:—He had one or two attacks in which he cried out, frothed at the mouth, and fell, but the onset was never seen. The headache became more severe, being mainly referred to the occiput, but at times extending to the temporal and frontal regions. He suffered from attacks of nausea and vomiting, “after which the pain in the head became excruciating.” The sense of smell had been for some time lost. The eyesight slowly failed until perception of light was lost—the left eye holding out longer than the right. There was distinct failure of hearing in the left ear. “The speech was somewhat thick and the articulation was not very distinct, but there was no more disturbance than is often noted with healthy people, no stumbling over syllables, no incorrect use of words, nor any difficulty in comprehending what was said.” He had at times an urgent desire to urinate, but inability to accomplish the act for some time on attempting it. With the vision-failure his gait got unsteady, but *there was no staggering or incoordination*. The left leg and thigh were much wasted, the foot presenting a typical talipes equino-varus. Some time later it was noted that there was some weakness of the ocular muscles, and of the masseters, the other facial muscles appearing unaffected. “The pupils were dilated, equal, and reacted to convergence though not to light. Vision and smell were lost. Hearing in the left ear was much diminished.” His symptoms continuing and the muscular weakness increasing, while the general health showed marked signs of deterioration, an operation was advised. Trephining over the right Sylvian fissure was accordingly per-

formed and two buttons of bone an inch in diameter removed and the intervening bone broken away with rongeur forceps. No neoplasm or alteration was found in the brain substance, but there was marked bulging through the opening. Some slight improvement followed the operation; but a hernia cerebri formed, and though he remained conscious and *free from pain*, he gradually sank and died seven weeks after the operation. At the autopsy a tumour was found in the left lobe of the cerebellum, which was considerably enlarged. The new growth measured about 3 cm. antero-posteriorly and transversely, and about 1.5 c.m. in thickness. It had a dense capsule, and the interior was of semi-solid consistency. Microscopically examined it was found to be a tubercular growth.

This case has been referred to at some length as illustrating two important points: 1. The difficulty which besets the surgeon in the localisation of cerebral tumours in the absence of *focal* symptoms; and 2. The prolongation of life, or the relief from intolerable pain which may be obtained in even hopeless cases by the operation of trephining and the relief of the intra-cranial tension. In this case Dr. Knapp admits that the operation undoubtedly shortened the patient's life, but gave him for the time relief from pain. In future operations he recommends a larger opening and tapping of the lateral ventricles, referring to a case in which this was done with some relief.

Once again the case shows how fallacious our so-called diagnostic signs are in intra-cranial lesions. "I advised trephining," writes Dr. Knapp, "over the right temporal lobe, being influenced by the local tenderness, the increased surface temperature in that region, the early loss of smell, and the deafness. The event showed that these indications were fallacious." Such being the case, it cannot be too strongly urged on all physicians and surgeons to publish with all minuteness of even trivial details every case of intra-cranial lesion, in order that out of the multiplicity of symptoms we may be enabled eventually to sort and sift together those which predominate in any special group, and so inspire surgeons to work with more certainty and better hope in a field which is at present so dark and so beset with difficulties and dangers to life as almost to bar operative attempts at relief in all save the extremest cases. *Lasciate ogni speranza voi che intrate.*

II.—INTRA-CRANIAL NEURECTOMY OF FIFTH NERVE.

In an exhaustive paper (*Brit. Med. Journ.*, Nov. 28, Dec. 5, 12, 1891), Mr. Victor Horsley reviews the "Various Surgical Procedures devised for the Relief or Cure of Trigeminal Neuralgia (Tic-Douloureux)," and gives an analytical table of nineteen cases in which he has performed different operations. A special method of excising a portion of the inferior dental nerve is described in detail and appears to possess certain advantages over the methods of Paravicini, Lücke, and Velpeau; but it is to what may be called the radical method of treatment—or operations directed on the points of origin of the nerve trunks or on the Gasserian ganglion itself—that the eyes of surgeons have recently been turned, and mainly through the brilliant results that have been obtained by Mr. Rose in his operation of removal of the Gasserian ganglion. In this connection it may be noted that Mr. Horsley, as the result of his experiments, believes "that the operation of complete removal of the Gasserian ganglion is not possible, but that in the operation which Mr. Rose has subsequently described only a portion of it can be taken away." Hence he was led to try the possibility of dividing the fifth nerve behind the ganglion, and, as the result of test-work on monkeys, now recommends the following procedure, which is best described in the words of its author:—"This exposure of the temporo-sphenoidal lobe in man I have carried out by making a large temporal flap, starting from the anterior extremity of the zygomatic process, and running upwards to the temporal ridge, following that line and descending along it to the asterion. The temporal muscle, after being separated from the bone, is then best removed, so far as its posterior half is concerned, and thus the whole of the squamous portion of the temporal taken away by means of a trephined hole and suitable bone forceps. Anteriorly the middle meningeal artery may be dealt with where exposed, being simply ligatured in the dura mater. The dura mater is then to be opened along the full length of the area of bone removed, and the temporo-sphenoidal lobe thus laid bare. A broad copper retractor, with smooth and everted edges, is then gently slipped underneath the lobe and slowly but steadily raised. The lobe is partly moulded, partly lifted upwards, and the floor of the skull is then easily seen and illuminated with the electric light. The guide to the fifth nerve now is the upper border of the petrous bone. The lobe being raised a little more, the edge of the tentorium will

be defined, and the point at which the the fifth nerve passes beneath it could, in the first case I operated upon, be seen. The position of the canal in which the nerve is lying, just above the ganglion, must then be estimated, and a small puncturing incision made into it. As it is about a quarter of an inch in diameter, it can be recognised as soon as the puncturing instrument passes into it, and the dura forming its roof should then be further slit open. The nerve in this way is exposed, and is found to be freely lying in the little passage." In the one case in which Mr. Horsley has performed this operation the patient had already undergone excision of the inferior dental, with relief for two years, and removal of the second division at the speno-maxillary fissure, with relief for one year, and the fifth nerve was *torn* from its attachment to the pons by this intra-cranial method. "Unfortunately the patient never rallied from the operation, and died seven hours afterwards obviously from shock." This Mr. Horsley regards as "due to the special circumstances of the case."

Quite independently of these results of Mr. Horsley, a successful case of intra-cranial neurectomy comes to us from across the Atlantic, the operation having been performed last August, and the author apparently being ignorant of Mr. Horsley's method. In the *New York Medical Journal*, March 19, 1892, Vol. LV., No. 12, Dr. Frank Hartley publishes an interesting paper, with the title, "Intra-cranial Neurectomy of the Second and Third Divisions of the Fifth Nerve: a New Method." The patient was a man, aged 46, who in December, 1882, began to suffer from neuralgia chiefly referred to the mental portion of the inferior dental nerve. The pain gradually increasing in intensity, spread over the whole of the left side of the face and head, and in September, 1884, the infra-orbital nerve and Meckel's ganglion on that side were removed, with the result that for some four or five weeks he got relief from pain, though the spasmodic twitchings of the muscles remained. Shortly after this thirty-one teeth were drawn (!), and eighteen months later section of the inferior dental nerve was performed, still without relief, the pain continuing constant, and the contractions of the facial muscles averaging forty to the half hour. The patient then came under Dr. Hartley's care. "Owing to the previous operations," he writes, "and the involvement of the lingual and auriculo-temporal nerves, I decided to attack the nerve at a point where I could divide the second and third divisions of the fifth nerve completely by one operation. The operation intended was to attack the nerve

on the inner surface of the skull outside the dura mater, to isolate the second and third branches completely, to divide and resect as large a portion as possible." The operation was performed on August 15, 1891. "An omega-shaped incision was made, having its base at the zygoma and measuring a distance marked by a line drawn from the external angular process of the frontal bone to the tragus of the ear. The curved and rounded portion of this incision reached as high as the supra-temporal ridge, the diameter of said circle being three inches." All the tissues were cut down to the bone in this incision, the periosteum then divided along the line, and the division of the bone in the circle accomplished. With a periosteal elevator the base of the omega was fractured and the bone turned down in a flap which contained also the periosteum muscle and skin, thus exposing the dura mater over a circular area of about three inches in diameter. "The middle meningeal artery was then tied, the dura mater separated from the bone, and the floor of the middle fossa of the skull was exposed. Broad retractors were used to raise the dura mater with the brain and to expose the foramen rotundum and foramen ovale. The hæmorrhage was stopped by sponge pressure. The exposure of the first, second, and third divisions of the fifth nerve, together with the carotid artery and cavernous sinus, was exceedingly good. The second and third divisions were isolated at the foramen rotundum and foramen ovale, and that part between these and a point beyond the Gasserian ganglion was excised. As this amount of nerve is not very great, the ends of the nerves were pushed through the two foramina, so as, if possible, to interfere with any reunion. In the retraction of the dura mater, owing to imperfect instruments, the third, fourth, and sixth nerves were somewhat injured. As no bleeding was present, the brain was allowed to fill the fossa. The flap—consisting of bone, periosteum, muscles, and skin—was replaced. . . . The periosteum was stitched, the muscle sutured in place, and the skin sewn with silk." One drainage tube was inserted at the lower angle. The day after the operation ptosis of the left upper lid appeared, together with diplopia and inability to move the eye, but these symptoms gradually disappeared, and at the end of six weeks no trace of them was left. The paralysis of the pterygoid, temporal, and masseter muscles produced by the division of the motor portion of the fifth was, of course, permanent, but apparently incommoded the patient to a very slight extent. In January, six months after the operation, the patient continued free

from pain, could attend to his business, and had gained a stone in weight. This eminently satisfactory result offers a further chance to those patients to whom the milder (though sufficiently grave) operations have failed to afford permanent relief. Now that the practicability of the intra-cranial route has been demonstrated, we shall doubtless have a host of explorers, and not improbably have the value of the operation lessened and its justifiability questioned by the reckless haste with which it will possibly be applied to a class of hopeless or totally unsuitable cases. To justify a surgeon in undertaking such a procedure there must be the fullest agreement as to its necessity on the part of the patient, his friends, and his medical advisers, and on the part of the surgeon the very widest experience, and skill, and carefulness as to details, which in cerebral, more than in any other branch of surgery, are the factors that determine the success or the failure of an operation, the credit or the discredit of the operator.

III.—TREPHINING FOR TRAUMATIC EPILEPSY.

In a paper published in the *Boston Medical and Surgical Journal*, January 7, 1892, Drs. Knapp and Post record their experience of two cases. It is worthy of notice, if only from the postulate with which they start, more especially now when every day the records of cerebral surgery are illumined with brilliant successes:—"The hope of cure from trephining in traumatic epilepsy, or from excision of the cortex in Jacksonian epilepsy, is now regarded as slight, although relief is not infrequently obtained." It is, however, a truism that, if not more, at least as much knowledge is gained from surgical failures as from surgical successes, and these cases are no exceptions.

The first case was that of a girl, aged sixteen, in whose family there was a history of insanity. Five years before she came under observation she was struck on the forehead with a stone and rendered unconscious, in which state she was carried to a hospital in Dublin, where she was then living, but after three days regained her senses, and except for a strabismus (nature not stated) which persisted for some time after the injury, recovered her usual health. She soon began to suffer from headache, "the pain being referred to both sides of the forehead and to the top of the head, but, as a rule, starting from the seat of the injury." This headache was an almost daily phenomenon. "In November, 1889, she had a convulsion (five years after the accident). There was no aura; the head and

eyes turned to the right, and the limbs worked. She frothed at the mouth, could not speak, began to stutter, something came up in her throat, and then the head turned and she fell." This description certainly reminds one of the *globus hystericus* so common in ordinary epilepsy. At this period the attacks occurred about once every week. Treatment by bromides for over two months produced no beneficial results, and the attacks were now preceded by vertigo. It was accordingly decided to give her the chance of relief by operation. "She was therefore trephined by Dr. Post on the 24th of April, a button of bone was removed, the dura and a portion of adherent brain-substance excised, and as much of the cicatricial tissue as possible was removed. Some thickened connective tissue was left in close proximity to the longitudinal sinus, which could not be removed except by cutting the sinus; elsewhere all tissue was removed down to healthy brain substance." She made an excellent recovery, the wound uniting by first intention, and twelve days later was "actively employed about the ward." The following day she had two convulsions; the same the next day; after which they came less frequently, none being recorded between June 4th and 21st, when she was discharged. She shortly afterwards was lost sight of, the convulsions still occurring at intervals.

The second case was that of a young man, aged eighteen, who when twelve years of age had been struck a blow on the right temple by a negro who was chasing him. He was "dazed" for a time, but except for a "black eye" speedily recovered. In less than a year he began to suffer from seizures of indefinite character, but at the time he came under observation these attacks occurred three or four times a day in a mild form, with two or three severe seizures during the week. "The severer seizures begin by turning of the head to the left; the left side of the face, the platysma and sterno-mastoid muscles, and the left arm twitch; the neck is more affected than the face. He sometimes bites his tongue, falls, loses consciousness, and passes urine involuntarily. His physician reported that all the severer seizures began with a turning of the head to the left, and the left arm was usually affected. He frothed much at the mouth." He was admitted to hospital on April 29th, and the following day had a severe attack. On May 1st trephining was performed by Dr. Post. "The tender spot and the scar seemed to be very nearly over the centre for the movements of the head to the opposite side, and this movement was the signal symptom for the majority of the fits. . . . Almost directly beneath was found

a marked bluish-white opacity of the pia, but the opacity and œdema extended in every direction under the edges of the trephine opening, so that it was clear that the lesion was diffuse." He made a good recovery, all dressings being removed at the end of a fortnight, when he had his first convulsion since the operation. On the 4th June he had passed an interval of eight days without a convulsion, having had thirteen in all since the operation. Six months later he is reported as "not materially improved since the operation. . . . For three weeks after it he was apparently well, then had several days (two or three) in which he suffered from slight attacks characterised by temporary loss of consciousness, with profuse flow of saliva and unintelligible muttering and mumbling—each attack lasting from three to five minutes. Between each series there is an interval of ten or twelve days in which he apparently enjoys very good health."

In discussing the causes of failure in these cases—although we think the conditions were somewhat improved by the operations—Dr. Knapp recognises in cases of injury to the head two factors: one, a general commotion of the contents of the cranium; the other, a local injury of the skull and the brain beneath it. "The first factor," he says, "is always present, the second is not constant." But, looking upon these cases, the question naturally arises—Were they really examples of Jacksonian epilepsy? In both we find a certain train of neurotic elements to be considered: in the first, a mother admittedly insane for eight years, and an older sister who "was rather nervous;" in the second, a mother who is very nervous, an aunt who dies of paralysis (nature not specified), and another who died of meningitis. So that we have at least elements of a neurotic tendency that demand consideration in view of operative procedures. Again, in both instances the characters of the attacks resemble much more closely in their features those of the so-called idiopathic rather than those of the traumatic or true Jacksonian epilepsy. These cases, therefore, seem to point rather to the necessity for the judicious selection of cases than to the failure of the operation in undoubted forms of epilepsy, where the source of cortical irritation is certainly dependent on some localised pathological condition, and not on a vague lesion incapable of being accurately diagnosticated or limited. Injudicious application of an operation, however good and firmly established, always brings discredit upon both operator and operation; much more so when the surgical procedure is as yet in its infancy, and requires careful

sheltering from the east-winds of criticism in order to preserve a spark of vitality in it.

As regards the surgical details of these cases, reported by Dr. Post, there is nothing of importance in connection with them, except that in the second case, in which a large area was exposed, there was troublesome bleeding from the diploe, which was easily controlled by the use of a wax suggested by Mr. Horsley. This is made according to the following formula:—

R. Ceræ flavæ, 1;
 Vaselini, 4;
 Acidi carbolicī (1–40),
 Ceræ albæ, āā. q. s.
 M. Boil before using;

and is certainly an advance on the older method of plugging the bone with a wooden match! With Dr. Post's closing remark we thoroughly agree, provided that suitable cases are selected:—"The danger of the operation seems to be very slight indeed. I suppose it would be the common feeling of all surgeons at present that while no operation should be done unnecessarily, there is practically no more danger in trephining an adult in good health than in going through the soft parts."

(*To be continued.*)

THE UNIVERSITY OF VIENNA.

THE number of medical students at the University of Vienna last summer was 2,427, and of these 348 were foreigners of various nationalities. The numbers have considerably fallen off as compared with the previous winter, when there were 3,242 students in the medical department. In the summer semesters immediately preceding that of 1891, the numbers of medical students had been respectively 2,296, 3,185, 2,553, 3,105, &c. There has also been some diminution in the number of foreigners attending the school.—*N. Y. Medical Record.*

THE AMERICAN JOURNAL OF SCIENCE.

THIS purely scientific monthly has been in existence since 1818, and, under the editorship of the brothers Dana, maintains its high character. It is published at New Haven, Connecticut. The number before us contains thirteen original articles, followed by twenty pages of scientific intelligence. None of the papers bears, directly or indirectly, on medical subjects.

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

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SECTION OF ANATOMY AND PHYSIOLOGY.

President—HUMPHREY J. BROOMFIELD, F.R.C.S.I.

Sectional Secretary—A. BIRMINGHAM, M.B.

Friday, March 25, 1892.

The PRESIDENT in the Chair.

Extreme Anomaly of Heart.

PROFESSOR BIRMINGHAM read a paper on a case of extreme anomaly of the heart; for the specimen which was exhibited he was indebted to Dr. Joseph O'Carroll. The girl from whom it was removed had been under observation for some years. *History*:—Age, twenty-one; small size; clubbed fingers; cyanotic appearance; suffered from metrorrhagia at fifteen and again at eighteen; then treated by curetting uterus and iodine injections; four days after, right hemiplegia developed; communication between two sides of heart diagnosticated; recovered in two months. A year later admitted to hospital suffering from phthisis, from which she died in a month. Physical signs: apex beat on right side of sternum; harsh systolic murmur from 2nd right interspace down to a point 2 inches below right nipple; 2nd sound loud, sharp, accompanied by beat, felt by hand, in 2nd right interspace. *Post-mortem*.—Abdominal organs normal in position; lungs tubercular, anatomically normal. The heart and large vessels presented very unusual conditions; the chief anomalies are as follows:—The apex is directed to the right; whole organ twisted on long axis, so that left ventricle forms nearly as much of anterior surface as right. Aorta comes off from right ventricle in the position normally occupied by pulmonary artery; goes back over root of right lung, forming a right

aortic arch. Pulmonary artery arises from same (right) ventricle; its internal orifice is on posterior wall of ventricle, half way between base and apex amongst the columnæ carneæ; has a funnel-shaped valve higher up; diameter of orifice of valve little over $\frac{1}{4}$ inch (diameter of aortic orifice $\frac{3}{4}$ inch). A large aperture is present in upper and anterior part of interventricular septum, admits thumb; two ventricles communicate freely. No artery arises from left ventricle; its blood was probably sent through the foramen in the septum and on into the aorta through upper part of right ventricle. The septum auriculorum is almost entirely absent, and the two auricles communicate by aperture which admits three fingers. No auricular appendix lies at the base of the heart to the right of the arterial trunks, although the atrium of right auricle is here; the two appendices lie side by side on the left of the aorta. The left superior cava is persistent.

The author pointed out how the production of the various anomalies might be explained by a reference to the development of the heart. The aperture in the septum of the ventricles was due to the failure of the septum bulbi to meet the septum inferius of the ventricles. He also pointed out the probable course of the circulation, showing how it might be moderately efficient notwithstanding the irregularities of the heart. And he referred to the method of production of the physical signs observed during life.

DR. O'CARROLL—Dr. Birmingham has unravelled a difficult case in a much clearer manner than I had thought possible. It seems to me that in faults of development we must look to some abnormal force as upsetting the normal course of growth. In this case a morbid sign, as distinct from a developmental fault, is seen in the adherent condition of the otherwise well-developed pulmonary valves—that is, in all probability the patient had an adhesive pulmonary valvulitis in utero. Such a condition, by the necessity for re-arrangement of the circulation which it entails, seems to me to account fairly for the halt in development of the ventricular and auricular septa. As to the cause of the rough systolic murmur heard during life, while I do not deny that it may possibly have been augmented by the double stream in the aorta, I feel pretty confident that the murmur was in greater part produced in the pulmonary artery, where the funnel-like condition of valves seems eminently suitable for the production of a murmur; and I am confirmed in this view by the fact that the murmur was audible not merely in the aortic area of this case, but downwards towards the right nipple—that is, corresponding to the abnormal position of the pulmonary channel. Lastly, the accented second sound seems most easily explained by the fact that the aorta has here, at its beginning, no right auricle and pulmonary artery to act as pads between it and the thoracic wall, but lies immediately behind it. It is interesting, from the clinical standpoint, to remember that there

appeared, during the three years in which I kept her under observation, no reason why this patient should not have enjoyed a normal length of life had she not fallen a victim to a rather rapid attack of pulmonary phthisis.

DR. WOODS thought that some light might be thrown on the course of the blood-current by calculating if there was any difference (and if so, what?) between the pressures in the pulmonary arteries and aorta respectively, by measuring the thickness and calibre of the vessels, and using the formulæ $P \propto \frac{T}{r}$ or $\frac{t}{r}$ where P = blood-pressure, r the radius of curvature, and t the thickness of the wall.

PROFESSOR BIRMINGHAM, in reply, was glad to hear Dr. O'Carroll's opinion as to the production of the murmur and of the beat, which seemed very probable. His explanation of the cause of the anomalies in the septa of the heart was very ingenious, but he (Prof. Birmingham) did not think that a valvulitis producing such a pulmonary valve as that in the specimen could be present before the time of normal completion of the septa. Regarding Dr. Woods' remarks, he thought it would be interesting to carry out his suggestion. Owing to the fact that both aorta and pulmonary artery come off from the same ventricle, the blood sent through both was driven by an equal pressure, but the resistance offered by the pulmonary system was much less than that offered by the column of blood in the aorta; consequently more blood could pass through the narrowed pulmonary valve than at first sight would appear possible.

The Cause of the Light Reflex on the Retinal Vessels.

MR. STORY criticised the various views published as to the causation of the light streak seen on the retinal vessels in ophthalmoscopic examination, and expressed himself in favour of that advocated by Schneller, and which was originally proposed by the very earliest observer, E. v. Jäger—viz., that the light streak is a reflection from the anterior wall of the retinal blood-vessels. Jäger subsequently gave up this theory in favour of the view that the convex wall of the blood-column itself was the source of the reflex, the vascular walls being too transparent to produce the observed phenomenon. Another view has been proposed by Loring in 1871, and advocated again last year by Davis, which assumes that the light streak is caused by the blood-column acting as a cylindrical lens upon the light transmitted through it from the deeper illuminated tissues to the observer's eye. This view is unsound for many reasons—*e.g.*, the light streak is white, not red, moves with the rotation of the ophthalmoscopic mirror, and is unaltered by the colour or illumination of the background. Jägers' theory that the blood itself causes the reflex is based upon the erroneous opinion that the vascular walls are quite invisible. They are easily seen in all eyes—at least in the larger blood-

vessels—and the whole experimental and clinical evidence goes to prove that it is from these vascular walls that the light streak is reflected.

Mr. Story's communication was briefly discussed by the President and Drs. Birmingham and Woods.

Descending Degeneration from a Lesion of the Superior Temporal Convolution in a Monkey.

DR. W. H. THOMPSON said the lesion was kindly made by Professor Schäfer, and after death was found to involve a small portion of the upper end of the superior temporal convolution, and also to extend to the margin of the ang. gyrus. None of the motor area was involved, nor was any paralysis observed.

Degenerated fibres (traced by Marchi's method) were found in the posterior part of the internal capsule on the side of the lesion. Larger degenerated fibres were found in the middle region (motor) of both internal capsules. Those in the posterior part were traced up into the injured convolution, and to nowhere else. They were also followed into the extreme outer part of the "pes" of the crus, and from thence into the pons. They were not traced with certainty lower than this, the investigation not being yet complete. The degenerated fibres found in the middle regions were traced into crus and pons also. Their upper termination was not determined, the fluid having failed to penetrate the pieces of brain through some unknown cause. The animal was put to death by anæsthesia at the end of nineteen days.

The Section then adjourned.

SECTION OF OBSTETRICS.

President—ANDREW J. HORNE, F.R.C.P.I.

Sectional Secretary—F. W. KIDD, M.D.

Friday, March 18, 1892.

The PRESIDENT in the Chair.

Specimens Exhibited.

DR. CONOLLY NORMAN exhibited two cases of dermoid cysts, obtained as pathological specimens from patients who had died in the Richmond Lunatic Asylum from diseases connected with their insane condition, not having exhibited any symptoms during life that would have led anyone to suspect the existence of these tumours. One was about the size of a turkey egg, and the other was very small, but its nature had been verified by a most careful microscopical examination.

He also exhibited a specimen of tubercular disease of the Fallopian

tubes, with the typical appearance of that disease, obtained from a patient who died of general tubercular disease, involving disease of brain, lungs, and mesenteric glands. In this case, too, there had been a most careful microscopic examination, resulting in the discovery of numerous tubercle bacilli.

DRS. DOYLE and MACAN spoke, and DR. NORMAN replied.

Notes and Remarks on a Case of Hysteromyomectomy.

DR. F. W. KIDD read "Notes and Remarks on a Case of Hysteromyomectomy." He brought forward the report of this case with the objects of—(1) Emphasising the precaution that should be taken in making a preliminary examination under an anæsthetic in any case where the slightest doubt existed as to the nature of an abdominal tumour. (2) That even then the surgeon should be prepared to deal with the most serious complications, and should approach the operation, having such surgical appliances as might be necessary in case his diagnosis was at fault and he had to finish by an operation very different from that which he had laid down in his own mind at the beginning. (3) To draw attention to the fact that large semi-solid and solid abdominal tumours may exist for a comparatively long period without the patient having any suspicion of their presence. (4) To submit the temperature-chart of the patient, which was very peculiar, for this reason, that for the third, fourth, and fifth weeks after the operation the temperature was subnormal, ranging from 96.7° to 98° , and that this period was synchronous with the period during which the lower angle of the abdominal wound remained open during the gradual discharging of two strong silk ligatures that had been used in tying the broad ligaments. This healed when the second ligature came away, and at the same time the temperature became normal. Dr. Kidd ascribed the condition of temperature to the fact of the suppuration going on, and asked for the opinion of the members on this point.

The patient (aged thirty-two), when being treated for an ordinary bilious attack in May, 1891, was found to be the subject of an abdominal tumour. The menses had been regular until four months previously, since when they came at intervals of five weeks and were more profuse, lasting 5-7 days. Vaginal examination was very difficult owing to the hymen being unruptured and to the vagina being narrow, and to the patient being very nervous. Tumour extended from symphysis pubis to umbilicus, semi-elastic, no fluctuation. Sound passed $2\frac{3}{4}$ inches; tumour seemed more prominent on right side—at this time it was diagnosticated as a myoma. The following September tumour had increased in all diameters, had given rise to bladder irritation, interfered with locomotion. Menses had a longer interval between them, but were even more profuse than in May, and were accompanied by pain. The sound passed $2\frac{3}{4}$ inches, and

tumour, when rotated, only moved the handle of the sound as much as if the movement was communicated and not direct. On this occasion diagnosis of ovarian tumour was made. Patient had not been examined under an anæsthetic. Operation, performed on 29th September, proved it to be a rather œdematous myoma. In consequence of not having transfixion pin, elastic ligature, and serre nœud, these had to be sent for. The abdominal incision was $6\frac{1}{2}$ inches long before the tumour could be lifted out of the abdomen. The ovaries and tubes were removed with the tumour, as, owing to the size of the tumour and the fact that these organs were placed far behind it, they could not have been reached and removed without first lifting the tumour out of the abdomen. The broad ligaments were ligatured on each side by three ligatures by silk that had previously been boiled in corrosive sublimate solution and then kept in absolute alcohol. The elastic ligature was fastened as low down as was possible, so that the stump could be drawn up into the lower angle of the wound, the delta metal transfixion pin introduced, the tumour amputated, the cavity of uterus in the stump was cauterised, and so was surface of stump, which was treated extra-peritoneally. The elastic ligature was left on permanently. The peritoneal cavity was occluded from possible infection from the stump. Stump was dressed with iodoform gauze packed round it, and dusted with a powder containing three parts of tannic acid to one of salicylic acid. Operation lasted over two hours; patient suffered from no collapse; wound not dressed for a week; incision then perfectly united. Stump came away on the 18th day. Temperature never reached 100° F., but remained subnormal for three weeks after stump came away, during which time the sinus at lower angle of wound did not heal. On examining the specimen it was found to consist of two myomata amalgamated. The cavity of the uterus embodied in the tumour only measured $1\frac{1}{2}$ inches. The amount of enlargement of the cavity was very small considering the size of the tumour. When the patient was first seen and the tumour discovered, although then the size of a foetal head at full term, she was positive in her assertions that she never had been aware of its existence. Had the patient been examined under an anæsthetic, Dr. Kidd thinks the right diagnosis might have been made, and Dr. Kidd would always pursue this course in future. When any possible doubt existed as to the diagnosis, Dr. Kidd would in future be prepared to deal with the unexpected.

DR. ATTHILL said that though errors of diagnosis could hardly be entirely avoided, still their occurrence would be rendered much less frequent were the patient examined while under the influence of an anæsthetic, as should happen in all doubtful cases. In Dr. Kidd's case the patient suffered from profuse menstruation, and that symptom pointed to the probability of the tumour being uterine, menorrhagia being of rare occurrence in ovarian disease; also the frequent desire to micturate

is seldom observed in the latter, but is often complained of by patients who are the subjects of uterine myomata.

DRS. HOEY and DOYLE also spoke.

DR. KIDD replied. In reference to what Dr. Atthill remarked about the probability of the tumour being uterine because of the occurrence of profuse menstruation and bladder symptoms, Dr. Kidd held that, as the menstrual periods were at longer intervals than usual, and as the tumour was diagnosticated as being ovarian with uterine adhesions, the element of doubt still remained, as prolonged intervals between menstruation and bladder irritation might be caused by an ovarian tumour with adhesions as well as with a purely uterine tumour. Dr. Kidd regretted that none of the members had touched on the point of the subnormal temperature for three weeks as being dependent on the suppuration caused by ligatures being expelled.

The Causes and Treatment of Dysmenorrhœa.

DR. MORE MADDEN read a paper on the above subject. [It will be found at page 372.]

DR. ATTHILL, though he agreed with Dr. More Madden on some points, could not do so in others. He believed that flexions of the uterus very rarely, if, indeed, ever, were *per se* a cause of painful menstruation; but if endometritis were present in addition to the flexions or a conical cervix and pin-hole os, then the function would probably be painful. As to mechanical obstruction as a cause of dysmenorrhœa, that was exaggerated. You met with cases frequently in which the os uteri was very small, and yet the function was painless for years, and then became painful. Sexual intercourse, in such cases, tending as it did to cause an increased determination of blood to the organs of generation, was sometimes the exciting cause of dysmenorrhœa in such cases. Cold was another inducing cause of congestion and subsequent inflammation of the endometrium. As to treatment in inflammatory cases, division of the cervix or dilatation were, if practised, only preliminary steps to such treatment as would remove or relieve the local disease, and neither should be practised unless the stenosis were such as to prevent the free exit of the menstrual flow and of the mucous discharge which always was present in these cases; but, if the cervical canal were too narrow and os too small to permit of this, dilatation or division was justified. It should be borne in mind that dilatation was only a temporary proceeding, and that within a few days after it had ceased to be practised the os and canal would be as small as ever; therefore, if pregnancy did not occur immediately no permanent benefit followed, and it was frequently better to divide the cervix, taking care to prevent the incisions healing up, but neither procedure alone would suffice. The endometrium must subsequently be treated. Dr. Atthill objected to the use

of any form of metrotome, and always used a scissors for the purpose of dividing the cervix. No doubt, in some cases the pain was due to spasmodic contractions of the muscular fibres of the uterus, which dilatation might relieve, but seldom cured. In a case recently under his care, in which amenorrhœa had existed for months, pain at tolerably regular periods and of an excruciating character was experienced. Benefit in this case resulted after dilatation had been regularly practised at short intervals for some weeks.

DR. MORE MADDEN replied.

THE MICROBE OF MEASLES.

THE *Berliner klinische Wochenschrift* of April 18, 1892, contains a paper by Drs. P. Canon and W. Pielicke, Assistant Physicians to the Moabit Hospital, Berlin, in which they give the results of researches on the bacteriology of measles recently made by them. At the suggestion of the Director, Dr. P. Guttman, Canon and Pielicke made stained preparations of the blood of 14 patients suffering from measles, and in all cases they found "one and the same" bacillus. The preparations were made in the same way as in Canon's researches on Influenza (see *Brit. Med. Journ.*, Jan. 16, 1892, p. 129), and were stained with eosin-methylene blue solution. In the preparations the bacilli were found stained blue, sometimes uniformly, but frequently much more deeply at the ends than in the middle; sometimes only the edges of the middle portion were stained. The bacilli vary much in size—sometimes they are as long as half the diameter of a red blood corpuscle, sometimes they are quite small and have the appearance of diplococci. Occasionally they are of extraordinary length, almost equal to the diameter of a red blood corpuscle. The bacilli were found during the whole course of the disease, and in one case even three days after defervescence. As a rule, they were found most abundantly at the time of defervescence. Bacilli of the same shape as those found in the blood were seen in the expectoration and in the nasal and conjunctival mucus of patients suffering from measles. Drs. Canon and Pielicke succeeded in making first cultures of the bacillus in bouillon, but the organism (which they regard as specific and the true exciter of measles) would not grow on the other media usually employed, nor could further cultivation be obtained from the bouillon.—*Brit. Med. Journ.*, April 23, 1892.

REMINISCENCES OF THE DUBLIN BIOLOGICAL CLUB.*

By ARTHUR WYNNE FOOT, M.D.; Senior Censor and Vice-President,
Royal College of Physicians in Ireland; Senior Physician, Meath
Hospital, &c.

THE object aimed at in this communication, entitled "Reminiscences of the Biological Club," is a retrospective glance at its origin and progress. It can be nothing more than a sketch or outline, both because the subject is large and the canvas small, and because time allows of only the briefest allusion to some of the many persons and places which have at one time or another been identified with this club—a club unique in some respects and peculiar in many.

As the club is now in the twenty-first year of its existence, and as I am one of the five surviving original members who remain connected with it, it has been an amusement to me to look over its records with a view of preserving some information about its early history from falling into oblivion.

The club has gone through three distinct epochs or periods of existence—the first, its infancy, was passed in Trinity College, and lasted for three years; the second, its youth, continued for a space of seven years, during which it was lodged in Great Brunswick-street; and it may now be said to have reached maturity, since it has been located on the premises of the Royal College of Physicians of Ireland in Kildare-street, where it is spending the eleventh year of its tenancy, and the twenty-first of its existence.

The Biological Club was formally inaugurated and christened in No. 30 T. C. D., north side of the Belfry-square, on Saturday evening, 6th of January, 1872. On that date a meeting was held there, at 8 p.m., "to consider the expediency of forming a scientific club." There were nine present at this meeting—James Adams Clarke, George Frederick Duffey, Charles Edward Fitzgerald, Arthur Wynne Foot, Thomas Evelyn Little, John Mallet Purser, Henry Rosborough Swanzy, John Todhunter, Gerald Francis Yeo. Some others who had been invited to attend but who were not present at this meeting were—Edward Hallaran Bennett, Edward Wolfenden Collins, Reuben Joshua Harvey, John William Moore, Richard Rainsford. These five latter were co-opted with the nine others present to form the *original* members, making fourteen in all. R. J. Harvey was elected secretary and treasurer for the ensuing year; the subscription was fixed at ten shillings a year, each new member to pay in addition an entrance fee of ten shillings. The election of new

* Read before the Club, 5th April, 1892.

members was to be by unanimous vote. It was further arranged that the club should meet in No. 30 T. C. D., at 8 p.m., every Saturday night, for eight months in the year, from the last Saturday in October to the last Saturday in June. The chairman—to be elected each evening as soon as three or more members had arrived—was given absolute control over the proceedings.

Of the fourteen *original* members four have left Dublin—J. A. Clarke, E. W. Collins, G. F. Yeo, J. Todhunter, but are all at present (April, 1892) living, and *honorary* members; two others have resigned—J. W. Moore and C. E. Fitzgerald; three have died—R. Rainsford (Feb., 1880), R. J. Harvey (Dec., 1881), and T. E. Little (Nov., 1891). Of the fourteen five still remain in Dublin—E. H. Bennett, G. F. Duffey, A. W. Foot, J. M. Purser, H. R. Swanzy.

Within the first month of its establishment four members were added to the club—all of whom, strange to say, have since died—Robert M'Donnell, Henry Wilson, Benjamin George M'Dowel, and Anthony Corley. Foreseeing a rapid increase in numbers from its then total of eighteen, it was soon (3rd Feb., 1872) resolved that the number of members should be limited to thirty. In the same month (23rd Feb.) it was resolved that each member should contribute a paper, at least once during the year, as a condition of membership. A committee of three was appointed (8th Mar., 1872), called the Morbid Anatomy Committee, to report upon any specimens as to which there might be a difference of opinion; the three selected were T. E. Little, J. M. Purser, and G. F. Yeo. This is now called the Committee of Reference. At the same time it was resolved that recent specimens should have the precedence of papers for the evening; recent specimens were defined to be such as would be injured by being held over to the next meeting. Early in this session (17th Feb., 1872), the night of meeting was changed from Saturday to Friday, chiefly because of Saturday being a very usual night for dinner parties.

The second session (1872–73), opened in T. C. D. (4th Oct., 1872), with twenty-two members, and a balance in favour of the club of £4 17s. 10d., £2 of which was allocated towards the coal fund. R. J. Harvey was re-elected secretary and treasurer for the ensuing year. At the first meeting of this session it was resolved that the mode of election should be changed from its original form—that of an invitation signed by all the members—to a ballot, one black bean in ten to exclude, absent members to have the right of voting by proxy. The night of meeting again changed to Tuesday (by resolution 21st Feb., 1873).

The vigorous nature of the club is indicated by a resolution passed near the end of the session (24th June, 1873), to continue the weekly meetings on all through the summer and autumn months, instead of closing in the last week of June. This step was taken without calling a

general meeting, there then being no fear of "rules" before the eyes of the members. To facilitate this innovation the hour of meeting was changed to 8½ p.m., for the extra evenings. There were exertions made even so long ago as the second year—notice of motion promised—to obtain possession of a good microscope for the use of the meetings. The club continued to meet on Tuesday evenings at 8½ p.m., on through the autumn. The meetings, though not very regular, and often small, were frequently pleasant enough. The minutes of 9th Sept. (1873) record that three members were present. After the conclusion of some light business, it was proposed and seconded, and their being no dissentient—as the chairman sagaciously declined to vote—it was carried, that the club should adjourn to Professor Hynes', in the city, to study the anatomy, physiology, and therapeutic properties of some common bivalve molluscs. There were then no apprehensions of enteric fever latent in the minds of any ostreophagist.

The third session (1873–74), opened in T. C. D., 7th Oct., 1873. R. J. Harvey resigned the office of secretary and treasurer, and G. F. Yeo was elected in his place. A sum, not to exceed £11, was voted from the club funds for the purchase of a microscope. As a result, perhaps, of the over-exhaustion of the previous summer the material for the evening meetings became more and more scanty, and it sometimes looked as if the club would collapse from well-marked uncomplicated starvation. A special discussion took place (14th Oct., 1873) on the best mode of supplying pabulum for each evening of meeting. There was no inclination to repeat last year's experiment of keeping at work all through the summer, and the third session ended 23rd June, 1874.

The fourth session (1874–75), opened with thirty members (the full number) in T. C. D. The room in No. 30 having proved inconveniently small, R. J. Harvey, T. E. Little, and the secretary, G. F. Yeo, were deputed to look out for more commodious quarters. Their labours ended in the renting of a large room in 212 Great Brunswick-street, over Clarendon's Riding School, at the western side of the Queen's Theatre, for a period of six months, at a payment of six shillings an evening. This house now forms part of Mackenzie's buildings facing Tara-street. The first meeting of the club was held in this room, 3rd Nov., 1874, and here the club assembled for seven years, till they moved to the premises of the Royal College of Physicians, in Kildare-street. At the last meeting of this session the secretary and treasurer, G. F. Yeo, tendered his resignation after two years of office; the minute book records that it was accepted "*with acclamation.*" This entry, which is in G. F. Yeo's own unmistakable handwriting, is indicative rather of his personal feelings upon being released from an irksome office, than of any reflection on the part of the club upon the way in which he had discharged his duties.

The first three years of the club's life were passed with the careless indifference of youth in No. 30 T. C. D.—indifference, *i.e.*, to many details of ease and comfort which would now cause a general outcry had they to be submitted to. The meeting room was on the ground floor, the accommodation very unlike what we have at present, but the evenings were often, if not always, as lively and as instructive as they have ever since been in more pretentious quarters. The room belonged to R. J. Harvey and C. B. Ball, the latter was early elected (27th Feb., 1872) an hon. member in recognition of his courtesy in allowing such a weekly trespass on his premises. Seven years later C. B. Ball was elected an ordinary member (21st Oct., 1879). [The conditions of hon. membership were at that time quite different from what they are at present. The order is now confined to “former members of the club who have left Dublin.”] R. T. Stack was a parallel instance; he was elected an hon. member while unqualified (18th March, 1873); four months afterwards (1st July, 1873), having taken his degree, R. T. Stack was elected an ordinary member of the club.

Seats were scarce in No. 30, and were secured of course by the earliest arrivals, so that it was one of the first regulations that each new member should provide himself with “a chair, to be left in the club room, whether such person were to continue a member or not.” When the rule allowing each member to introduce one visitor was passed, the chairman expressed a hope that owing to the paucity of seats this privilege would be used by the members with discretion. As our room of meeting was low and small, the two windows looking out upon the Belfry-square were usually wide open, both sashes and shutters, for sake of ventilation, and so, the room being on the ground floor, our proceedings were often observed with curiosity by inquisitive students passing to and fro in the courts outside. They were much exercised in mind as to the nature and objects of our assembly. The company seemed too amicable for the meetings to have a political complexion, and not sufficiently dignified to be a branch of the philosophical or theological societies. Some suggested it was a gastronomic sodality, others held it was a vivisection club. It was rumoured among the jibs through Botany Bay that the resurrectionists in No. 30 had been seen handing brains, livers, and kidneys from one to another, and heard saying they were exquisite, and also filling pipes and drinking beer with unwashed hands round a table covered with dishes and trays full of human entrails. Some of them thought it wrong that the Provost should be kept a moment longer in ignorance of this state of things. Occasionally the window spectators gathering courage from their numbers—particularly at the time of year when there was bright daylight—would extemporise witty remarks at the expense of individual members of the club, and sometimes even became so noisy with ironical applause after a learned disquisition on

polio-myelitis or hæmorrhagic infarction as to disturb the stillness of the square itself. On such occasions it would be proposed, seconded, and carried, *nem. con.*, that a sally should be made in force and a victim captured, whose punishment was to be immediate deprivation of the testes without benefit of anæsthesia. The position of the room on the basement allowed of such a threat being rapidly executed, so that the mere suggestion of it was instantly followed by the rapid flight of the busy mockers, who for some time after used show considerable caution in loitering about the windows of No. 30.

In this, the Trinity College, period of the club, beer was the only fluid supplied for refreshment. There was no coffee, no aerated water, no such things as cigars or cigarettes; there was no soap or water, no basins, towels, or spittoons; matches were not provided, a well-twisted light of paper was a convenience not to be lightly cast away, and polite requests of "after you" were the order of the "night." "Church-wardens" were purchased by the gross from the makers in Francis-street, but after a time were given up, as inconvenient from their length, and because the number of fractures among them was incalculable, from want of a suitable place for storage. The beer was kept on draught, in half-barrels, light ale from Greenwood & Pim, of the Harold's-cross Brewery, long since closed; £1 1s. the half-barrel. The cask reposed on a bed of coals on the floor of a small closet, which formed a combination of coal and beer cellar, and also served as a tenement for some guinea pigs, white rats, and a kid which frequently, when in full evening dress, wore a manometer—I think it was called—in its carotid artery, or some other part of its neck, which made it look particularly uncomfortable. The contents of this aforesaid cask were subject to the strangest fluctuations in bulk, to discover either the cause, cure, or prevention of which several scratch and some select committees were appointed. Their reputations for acumen were invariably damaged by collision with a problem which proved to be insoluble. It is to be borne in mind that the solution of every mystery by a microbe had not been then invented, or perhaps a *Coccus beeriophilus* might have been discovered to be the culprit. The theories constructed to account for the remarkable diminution of the beer-content, mostly evolved from clouds of tobacco smoke, were leakage, evaporation, fraudulent paracentesis, and capillary aspiration. Even spontaneous annihilation was mooted—why not? Many then believed in spontaneous generation—why should there not be a Buddhism for beer, when it was the drink of the immortals?—the biological members. The problem remained insoluble. Of course no one was uncharitable enough to suspect the "skip," Tim O'Loughlin by name. "It was poor thin stuff for a working man like him to fancy; when the gintlemin come to his age they would like something a bit stronger. If it was in the regard of sperrits it was, he would not be

agin saying a drop of it would do a body no harm after the cleanin' up the likes of such a room on a fashtin' stummick." His explanation of the phenomenon, as well as it could be gathered from him in rare lucid intervals, was to the effect that the frequent disturbance of the cask, in subtraction of its underlying bed of coals, upset its equilibrium, producing such a redistribution of molecules as to effect a liquid sclerosis and diminution of bulk. He had always heard that no noise or commotion was ever allowed near the celebrated "*October ale*" where it reposed, on stately oaken trestles, in the college cellars. Various preventive measures were in turn suggested, and objected to or rejected. It was as true then as now that preventable diseases strongly object to being prevented. Among the remedies proposed for the atrophy of the beer-content one was to introduce, with due solemnity, into the cask $\frac{3}{4}$ oz. of the *antimonium tartarisatum*, B.P., and await the notification of acute illness in the district. This came from a disciple of Æsculapius. A pupil of Galen, who was the inventor of a thirty-ninth method of treating fractured patella, suggested that a trapdoor should be constructed in the floor through which the cask might be raised to the upper air while the club was in session and restored to its mausoleum each night before the chairman left the chair. The beer-coal-closet could not be kept locked because, in addition to the menagerie, it afforded shelter to a dilapidated slopbucket and a headless broomhandle; and the skip, in his anxiety to keep the room clean, found it necessary to have access at all times to these hygienic implements. Experience finally taught us that to keep the beer in bottles was a more convenient and economical arrangement, and it has been the method adopted during the second and third periods of the club's life.

In the three years while the club met in T. C. D. it held 110 meetings, the average attendance at which was nine, the maximum number present seventeen, the minimum three. This minimum number was in the second year (2nd Sept., 1873), when the club was meeting in the autumnal months, and when its vital force was at the lowest ebb. The greater number of the communications made were of a purely pathological nature, very few of a surgical, and still fewer of an obstetrical purport were made. The exhibition of a living specimen was unheard of.

The fourth year of the club opened in 30 T. C. D. (7th Oct., 1874), but within one month its quarters had been shifted to 212 Great Brunswick-street, where it held its first meeting on 3rd Nov., 1874. It appears that the commencement of this year found the club flush in cash, because the opening meeting concluded with a resolution, in acting on which no time was lost, that the club do adjourn without delay to D'Olier-street to eat oysters, "*at its own expense.*" This method of assimilating the funds was questioned at a subsequent meeting as a misappropriation of the club property, but a motion, on the part of some of the absentees on the

occasion, censuring the ringleaders in this extravagance fell to the ground, and ended "in a great smoke." However, the symposium which inaugurated this session will, like O'Rorke's noble feast—

. . . N'er be forgot,
By those who were there, and
By those who were not.

The fifth session, 1875–76, finds the club meeting on Tuesday evenings in 212 Great Brunswick-street. Treasurer's account showed balance due to late treasurer (G. F. Yeo), of £1 2s. 7½d. At the first meeting the offices of secretary and treasurer, hitherto combined, were separated, and C. J. Nixon was elected secretary and R. J. Harvey treasurer, for the ensuing year. Hon. members, in the present sense of the term, were instituted at the opening meeting (5th Oct., 1875). A great desire to be tied and bound by rules, perhaps in consequence of the recent irregularities in the way of suppers, led to the appointment of a committee (C. E. Fitzgerald, A. W. Foot, R. J. Harvey, J. M. Purser), to manufacture fetters. The result was a code of 41, since increased to 44 rules. Ballot was altered from 1 in 10 to 1 in 7 (its present form). The enactment of penal laws reached a climax on 12th Oct., 1875, when the celebrated rule, No. XXI., called the guillotine, was adopted. This rule then read as follows:—"Any member who shall not attend at least three times in a session, or assign a satisfactory cause for his absence to the annual general meeting next following, shall, *ipso facto*, cease to be a member." A resolution was carried (23rd Nov., 1875) that every member should, in alphabetical order, make a communication to the club or find a substitute to do so, under a penalty of 5s. for the first offence, 10s. for the second, and forfeiture of membership for the third. This rule never produced much money. However, three years after it was made, at the last meeting of the session 1878–79, Stewart Woodhouse apologised for having failed to make his stated communication, and begged to offer the club half-a-dozen of best champagne in lieu of fine. The offer was accepted, without a dissentient voice, even on the part of the total abstainers, as a spirited equivalent, and it was even hinted that it would be agreeable if some of the other members would, now and then, present their communications in this sparkling form. What became of the champagne does not appear on the face of the minutes, nor would it be fair to expect it to do so. The precedent has not been at all generally followed—in fact it still remains unique; but, as history is said to repeat itself, we know not when some modern member may wish to rival the deeds of the good and great of former times.

On one evening in the sixth session (21st Nov., 1876), Dr. Brown-Séquard was present as the guest of R. M'Donnell. The illustrious visitor expressed his approval of what he saw and heard, but made no allusion to the club about his *elixir vitæ*.

The club had been hardly two years in Great Brunswick-street when it began to look about for other quarters, for at a special meeting (28th Nov., 1876) it was resolved to seek the permission of the College of Physicians to meet on their premises. The next allusion to the club-room is on 17th April, 1877, when the secretary announced that the Chief Secretary for Ireland had, at the request of the Council, allowed the room in which the club met to be registered under the Cruelty to Animals Act, 1876. The first death in the club occurred at the end of this session, when it lost a valued and influential member in the person of Henry Wilson, who died from pneumonia, at the age of forty, on 13th June, 1877, at his house in Merrion-square, West (now No. 94). He was not an original member, but had been over five years in the club. He was Senior Surgeon to St. Mark's Hospital, and had been for some years at the head of his department of surgery. He was universally liked for his friendly and affable manner. He made many communications to the club on the surgery of the eye. There is no record of his death in the minutes of the club, as he died the day after the closing meeting in June, and he seems to have been, like other dead men, out of mind at the beginning of the next session. There are, however, still many here and elsewhere who require no minute to call up agreeable recollections of Henry Wilson.

In the commencement of the ninth session (21st Oct., 1879), an invitation from the directors of the Carmichael School to meet on their premises in Aungier-street was declined. Two £3 10s. Leitz microscopes, with stands and lamps, were ordered to be purchased for the club (28th Oct., 1879). R. J. Harvey resigned the secretaryship and his seat on the council, and C. B. Ball was thereupon elected to the vacant seat on the council, and subsequently (at same meeting) elected secretary. C. B. Ball had been elected an ordinary member of the club (21st Oct., 1879), one week previously, though he had been an hon. member since Feb., 1872, as part proprietor of the room in T. C. D. The explanation of his rapid promotion to the council after one week's membership was his long and intimate connection with the club. In the course of this session the club lost another member in Richard Bookey, who died in Jan., 1880, of phthisis, in his thirty-fourth year. He was one of the physicians to Dr. Steevens' Hospital, to which he had been appointed only twenty-two months. He was within a few weeks of having been for six years a member of the club. He was known as a successful private teacher, and an able pathologist and microscopist. He was of a silent habit and retiring manner, but could speak with energy and to the point on any subject within his own range of knowledge. Of modest, unassuming disposition, he never obtruded his information, though always ready to impart it to any inquirer. He was minutely accurate in everything which concerned his special studies. He belonged to the class of men who do a good deal and make very little

noise about it, rather than to that of those who do very little and make a great deal of noise about it.

A month afterwards there was another loss to the club in the death of Richard Rainsford, Senior Surgeon St. Mark's Hospital. He had been in delicate health for two years, and died, at the age of thirty-two, on 17th Feb., 1880. He was the first of the original members to drop off the list. It was a remarkable fact that, within a space of not quite four years, death had three times removed the Senior Surgeon of St. Mark's Ophthalmic Hospital. For seven months Richard Rainsford had been a confirmed invalid, and his death could only be regarded as a merciful release from his sufferings. Condolences were voted by the club to the relatives of these deceased members. In this session the presence of a reporter was objected to by the members, and Professor Haughton, in consequence, withdrew his paper on the subject of the execution of Martin M'Hugh.

At the opening meeting of the tenth session, 1880-81, Dr. Gordon fell under the guillotine of Rule XXI. In this session (18th Feb., 1881), another loss occurred in the case of Edward Peele, who died, aged forty-two, on the 13th day of typhus, contracted as medical officer of High-street Dispensary. Edward Peele had been in the club nearly six years. He was a native of Durham. On first coming to Dublin he was attached to the choir of St. Patrick's Cathedral, where he afterwards was a vicar choral. He had a remarkably fine tenor voice, and possessed a sound musical training and knowledge. He gradually gave up the study of music and took to that of medicine. He was connected with the Hospital for Incurables, the Hospital for the Throat and Ear, and with the Coombe Lying-in Hospital. He enjoyed the confidence and respect of all who knew him. Funeral services in honour of his memory were held in St. Patrick's and Christ's Church Cathedrals, as well as in the Chapel of Trinity College, on Sunday, 20th Feb., 1881. A stained glass memorial window was put up to him in St. Patrick's Cathedral; and Sir Francis William Brady, Bart., was the author of the touching lines on his death which appeared in *British Medical Journal*, Vol. I., 1881, p. 488.

Hushed is the voice so lately raised
In sweetest notes of sacred song;
Those notes, that God so oft have praised,
To God, for evermore, belong.

Cold is the hand that oft has led
The weary sufferer back from death,
When, by some lonely pain-racked bed,
Each moment seemed the last of breath.

Still is the heart, so warm and true,
That ever beat at honour's call,
Whate'er was right, 'twas his to do,
To duty live, to duty fall.

The eleventh session (1881-82) opened again in Great Brunswick-street. At the annual general meeting J. M. Purser came under the guillotine of Rule XXI., but by unanimous vote of the meeting his name was retained. Communications were reopened with the College of Physicians about meeting on their premises, and notice was received from the registrar, Dr. Finny (8th Nov., 1881), that the College had granted the required permission. The club availed itself without delay of this concession, and moved there in December, 1881. Strange to say there is no notice on the minutes of this change of venue till several years after when a meeting is headed College of Physicians, Kildare-street. Dr. P. S. Abraham was elected secretary 22nd Nov., 1881. Immediately after the move into Kildare-street the club sustained a great blow in the death of another of its original members. Reuben Joshua Harvey, aged 36, died on the tenth day of typhus, caught in Cork-street Fever Hospital. He had been secretary or treasurer—sometimes one, sometimes the other, at other times both combined—for the first nine years of its existence. He had attended and joined in discussion at a meeting of the club (13th Dec., 1881), five days before he sickened. He continued to attend the hospital patient from whom he had taken the infection until his own illness had lasted at least twenty-four hours. The authorities of Cork-street Hospital considered that they had lost the services of “a most able, learned, and conscientious physician.” In the vote of condolence passed by the club to his widow (3rd Jan., 1882), he was correctly described as “one of the founders of the club, to whose untiring zeal its success was mainly due.” An obituary notice, dealing at length with his merits, will be found in vol. 73, p. 174, of the *Dublin Journal of Medical Science*.

A review of the second stage, or the Brunswick-street period, of the Biological Club, shows that the club met in that quarter for a period of seven years, holding there 257 meetings, an average of 36 in the year. The average attendance at these 257 meetings was $9\frac{3}{4}$, maximum number 19, minimum 3; this was a slight increase over the average attendance in T. C. D. During a large, and that the earlier, portion of these seven years, Dr. C. J. Nixon filled the arduous post of secretary. One of his duties, and not the easiest, was to see that the fire was properly lighted in good time on Tuesday evenings. The room was noisy, owing to the proximity of the thoroughfare of Brunswick-street, draughty from its construction, and chilly from its size, and because the condition of any fire at all depended upon the energy and punctuality of the secretary. There was also a difficulty about the disposal of morbid specimens which had not existed in T. C. D. Sometimes those who brought them down to the meeting forgot or omitted to take them away again. This did not suit, as the night after our meeting the “Association of the Amalgamated Ironmongers’ Assistants” met there to discuss matters of great import-

ance, and on the following evening the "Solicitors' Apprentices' Debating Union." The objections raised by these learned bodies to the presence of even "exquisite pathological specimens" were so marked, that a rule was made that the club would defray any legitimate expense—to be interpreted as "a car fare within the borough after 10 p.m."—incurred in their removal. On the whole the reminiscences of the comforts of 212 Great Brunswick-street are not so pleasant as those of No. 30 T. C. D. A marked result of the change from T. C. D. to Great Brunswick-street was the exhibition of living specimens. There had been a difficulty about getting such into and out of College, and besides that there was no place to store them in No. 30, while waiting, unless in the menagerie. There is no record of a "live specimen" having been brought before the club while in T. C. D.; but in the fourth session, 1874–75, the first year of meeting in Great Brunswick-street, five were brought forward: one eye, one ear, and three medical cases; in the fifth session two, the sixth none, the seventh one, the eighth one, the ninth one, the tenth four, making fourteen live specimens during the seven years the club met there, an average of two a year. The exhibition of live specimens, as they were called, was not always viewed with approval by some of the senior members of the club, who thought that the parade might be uncomfortable to the patients, and that it was also to be regarded as a ready means of arriving at a diagnosis by gratuitous consultation. T. E. Little in particular objected to it, as foreign to the nature and aim of the club, and I never remember him to have shown a living specimen himself. At the end of the Brunswick-street period the proposal to have an annual dinner at Bohernabreena, in the Dublin mountains, was discussed. It met with general approval, and the first dinner of the club took place there in June, 1881. The amusement, after dinner, used to be flying kites, shaped like hawks and other predatory fowl; then quoit-playing came into fashion; of later years the *mode* has been firing with rifles at *empty* champagne bottles; no fatal accident has yet occurred, except to the bottles. The cost of the dinner was at first shared among those who chose to dine; now a sum is annually voted from the club funds towards the entertainment.

The Kildare-street period of the club began with P. S. Abraham as secretary (elected 22nd Nov., 1881). He held this office for three years. For the seven years since he resigned office G. P. Nugent has reigned in his stead. The treasurers of the Kildare-street period have been—C. J. Nixon (two years), C. B. Ball (three years), and W. G. Smith (five years). In the first session of our meeting in Kildare-street a heavy mass of a cornice fell on an evening meeting, and several of the members—T. E. Little especially—had narrow escapes of being hurt. This period of the Biological Club, being comparatively recent, need not be entered into with much detail. The thirteenth session, 1882–83, opened

with the full number (30) of members. Professor Macalister came under Rule XXI.; his excuse was accepted. The treasurer's report showing a deficiency of £3 1s., the annual subscription was, with one dissentient voice, raised to £1. An attempt to increase the stringency of Rule XXI., by changing 3 to 5 or 6, failed, and it remained as before, till recently when it has been raised to 5. It was proposed to raise the number of members from 30 to 40; a compromise of 33 was arrived at. This number was fixed on as corresponding to the number of evening meetings, so that each member might have a night for his stated annual communication. At the annual meeting of the fourteenth session (1883-84), Professor Haughton, Professor Macalister, and H. Fitzgibbon were sentenced under Rule XXI. The club, appalled at the prospect of such a hecatomb, accepted explanations. The increased annual subscription having produced a balance in favour of the club, suggestions were made to return to the former 10s. subscription and negatived. The council, in the largeness of their heart, at the close of the session voted a sum of £10 towards the Bohernabreena dinner. This was providential, as in the next session (1884-85) the surplus (small) was lost in the Munster Bank.

There were no deaths in the club during the T. C. D. period. There were three in the Brunswick-street period—Bookey, Rainsford, and Peele. In the Kildare-street period four occurred. That of R. J. Harvey took place, as before mentioned, immediately after the change from Brunswick-street, and left a *hiatus valde deflendus*. For nearly ten years there were none, of existing members of the club, till three came in succession, like thunder claps, each most unexpected; and by these deaths the Biological constellation lost three of its stars of the first magnitude. Robert M'Donnell died suddenly, on 6th May, 1889. The meeting of the club, held on the following day, was adjourned in consequence, and a wreath of flowers was ordered to be sent on the part of the members to be laid on his coffin. He had been over seventeen years in the club. He had just completed his 61st year. He had returned from a holiday on the continent a few days before his death, and said he had not felt so well for a long time. On Sunday evening he dined with his venerable father (then aged 91), on his return home he wrote letters for some time and went to bed—at one o'clock, a.m., he was dead. His next door neighbour, Dr. Cruise, had been immediately sent for, but only to find his dear friend was past his aid. On 1st December, 1890, A. H. Corley died in his 50th year. He, like R. M'Donnell, had been over seventeen years a member of the club. About twelve months after, on the night of 9th November, 1891, Thomas E. Little died in his house, 42 Great Brunswick-street, unexpectedly, like both those who had preceded him. Though, probably, each of them was personally aware that he had not long to live, few outsiders were aware of the secret, which is

one which medical men, because they know it so well, try to conceal, if they can, even from themselves, until the dumbness and greyness of dissolution reveal it to all. Tom Little showed his interest in the Biological Club by the regularity with which he attended its meetings. For many years he headed the list of members with the greatest number of attendances. He was not an incessant contributor, but every subject he brought forward—no matter how dry or commonplace—he immediately invested with an interest unsuspected of being resident in it; he discussed it in an original way, showed it in new lights, and made unforeseen points about it; consequently whenever he spoke he was listened to with profound attention. He was an accomplished man in many ways; a Scholar of the House, as well as the holder of a medical scholarship (1863). He was a great lover of chess, delighting in “the bloodless war that breeds good will.” I have seen him, more than a dozen times, sitting down after 10 p.m. in the University Club to solve the chess problems in the *Dublin Evening Mail* for relaxation. He had that combination of chivalry and love of analysis without which no one can enjoy chess. He was a good musician, and had a sweet, flexible voice. His singing at some of the earlier Bohernabreena dinners will be long remembered by those who heard it. There were some who said of Tom Little “*plus aloës quam mellis habet*,” but while his sweetness was never so intense as to be unwholesome, there was nothing corrosive in his tartness. He was a very general favourite, and his large funeral was attended by many who wore more crape upon their hearts than on their hats. He was one of the *original* members; in fact he belonged to the club in its embryonic condition, before it had an independent habitation or a name. Dr. Duffey, Professor Purser, and Mr. Swanzy will recollect the period I allude to, when the primordial germ of the present club met at my house in 21 Lower Pembroke-street, on Thursday evenings, for more than a year before its establishment in T. C. D. Tom Little was one of those who most strongly urged a change of meeting place on the grounds that it was inconvenient to bring specimens, &c., into sitting-rooms, and also that so much smoking and the noise of animated debates are not quite suited for a dwellinghouse. Tom Little never held the post of either Secretary or Treasurer, but was almost a standing member of the Council, was for twenty years on the Committee of Reference, and was as often as possible voted into the chair at the weekly meetings.

A review of the ten years during which the club has been in Kildare-street discloses a marked expansion in two directions—(a) in the variety of refreshments provided; (b) in the exhibition of living specimens. The original light ale is replaced now by beer in variety (Lager, Bass, &c.); mineral waters in variety; coffee, cigars, cigarettes, snuff, in addition to cut tobacco of the choicest description. The number of waiting-rooms on the College premises in Kildare-street facilitated the exhibition of

living specimens by affording convenient cages for them. During the whole seven years of the Brunswick-street period the number of living specimens brought before the club was 14. In the first year alone of the Kildare-street period the number exceeded that of the previous seven years, for it was 15. Taking the first seven years of the Kildare-street period, 123 living specimens were shown—an average of over 17 each session. An analysis of these 123 shows the large preponderance of eye cases, three times as many as those of any other class—*e.g.*, eye cases, 63; skin cases, 19; medical cases, 10; surgical, 20; dental, 3; laryngeal or throat, 3; pathological, 5; total, 123. Of the 14 patients brought down to the Brunswick-street room in seven years there were—eye cases, 3; ear, 1; pathological, 1; medical, 9. The patients brought to Kildare-street in seven years were 8·7 times as numerous as those brought in a similar period of time to Brunswick-street. None were ever brought to T.C.D. These facts show the marked progress the club has made in the direction of teaching by demonstration. There have also been several exhibitions of recent years with the lantern and limelight. The obstetric element is much more forward than it was in earlier years.

The club, now in its twenty-first year, has lived down much vilification, and falsified many predictions. It was prophesied, over and over again, that it would soon fall to pieces, that so many dissentient interests could not cohere long. Instead of that, it seems to have the secret of perpetual youth—not alas individually, for some at least must say of themselves, *non sum qualis eram*. The secret lies in the fact of its being constantly recruited from the ranks of rising merit, and annually renovated with an infusion of the best and freshest blood. The fatal Rule XXI. chops off the head of each according as he becomes wilfully careless, or hopelessly effete. It has been urged that it is a disadvantage thus to lop off the seniors, as age, infirmity, or occupation interfere with their regular attendance, and that payment of their subscription might be enough to expect from them, since they are not likely to occupy the room or consume the refreshments. But still this rule, though it often prunes away some acquiring weight and influence which might be at any time needful, is a mainspring in the vitality of the club of great importance.

The Biological Club in its early years had to put up with many sneers and scoffs, not always on the part of the youngest members of the profession. It was said to be a mutual admiration society, which met to bandy compliments under a canopy of tobacco smoke. It was called a tabagie or tobacco parliament—a Tabaks-collegium; the German Band, by those who boasted of belonging to the *Old School*—a phrase generally meaning any school which seems never to have been young; the Beeriological Club, and other names suggestive of the ridicule which often is the truest homage ignorance can offer to superiority. Yet the club flourished and increased in repute and importance, so much so that it has

long been no unusual matter for papers, &c., intended for various Sections of the Royal Academy of Medicine, to be presented here for a full-dress rehearsal—to be trotted out, as it were, before the club, that their action, style, and paces might be criticised—and they are often admitted to be the better of the touching up they get before they reach the ears of the Royal Academicians, for free and friendly discussion is the essential characteristic of the Biological Club. It will be generally admitted that fear of open discussion implies feebleness of inward conviction, and that great sensitiveness to the expression of individual opinion is a mark of weakness. Truth is tough—it does not break like a bubble at a touch; kick it up and down and from side to side all day, and like a good football, it will be round and full at night. Though we have had several quiet-going members, who seemed to hold that the only condition of peace in the present world is to have no ideas at all, or at least not to express them but in reference to the most elementary propositions, yet on many occasions our discussions, when the steel and flint of trained intellects came into friendly collision, have proved a real spading-up of the ground for crops of thought.

The prediction of the speedy resolution of the Biological Club into its primary constituents has not been verified. It forms, on the contrary, an amalgamation in which religious, political, or social distinction is unknown and unheard-of. Seniors and juniors meet together in its room, though they may be far enough apart outside. Those who are firmly seated in the saddle of professional success, exchange ideas with those who are but winning their spurs. Every college, hospital, and school in Dublin is represented in it; President of Royal College and Private Teacher, Demonstrator and Professor, meet here on equal terms. The only qualification for welcome admission is to be a *bonâ fide* worker in some department of medicine, general or special. The result of the harmonious co-operation of all—*quisque in suâ arte*—is the mutual benefit and instruction of each of the members of the B.C., as it is familiarly called. I remember no instance, nor have I ever heard of any personal unpleasantness arising out of a meeting of the Biological Club. It is a significant fact that, among its extensive body of rules there is not one dealing with the expulsion of a member. Had there ever been any need for such a rule, it could and would have been quickly made. There are three ways in which a member can commit a Biological *suicide*, and get out of the club in a rapid manner—by Rule 13, being in arrears of his subscription for over 12 months; by Rule 19, the third failure to make his stated communication forfeits membership; and by Rule 21, insufficient attendance without valid excuse. This last rule is the saw which removes any decaying branches before the canker can spread to the main stem.

It now only remains for me to apologise for such a prolonged trespass on the attention of many to whom the details of the distant past may be

rather uninteresting, and who would perhaps have been much better pleased had I, following the example of Stewart Woodhouse, bottled up this dry communication, and paid the penalty for doing so by a dozen of champagne.

List of past and present Members of the Dublin Biological Club.

[Originals in Italics.]

DATE OF ELECTION.			
Abraham, P. S.	- - Oct. 21, '79	-	Hon. member.
Bagot, W.	- - Nov. 4, '90.		
Baker, A. W.	- - Oct. 30, '83.		
Ball, C. B.	- - Oct. 21, '79	-	Sec. Oct. 28, '79; Treas. Oct. 2, '83.
Battersby, W. E.	- - April 5, '72	-	Erased Oct. '72.
Beatty, W.	- - Oct. 26, '86.		
<i>Bennett, E. H.</i>	- - Jan. 6, '72.		
Benson, A.	- - Oct., '85.		
Bewley, H. T.	- - Oct. 26, '86.		
Blackhall	- - Dec. 12, '76	-	Resigned.
Bookey, R.	- - Feb. 3, '74	-	Died Jan. '80.
<i>Clarke, J. A.</i>	- - Jan. 6, '72	-	Hon. Member.
<i>Collins, E. W.</i>	- - Jan. 6, '72	-	Hon. Member.
Coppinger, C.	- - Mar. 24, '74	-	Rule XXI.
Corley, A. H.	- - Feb. 3, '72	-	Died Dec. 1, '90.
Cruise, F. R.	- - 1876	-	Resigned.
Cunningham, D.	- - Nov. 7, '82	-	Resigned, Oct. 15, '89.
Drury, H.	- - Nov. 3, '91.		
<i>Duffey, G. F.</i>	- - Jan. 6, '72.		
Earl, H. C.	- - Oct. 22, '89.		
<i>Fitzgerald, C. E.</i>	- - Jan. 6, '72	-	Resigned.
Fitzgibbon, H.	- - July 8, '73.		
<i>Foot, A. W.</i>	- - Jan. 6, '72.		
Franks, K.	- - Dec. 12, '76.		
Gordon, S.	- - Mar. 24, '74	-	Rule XXI.
Gunn, Christopher	- - 1878	-	Resigned, Oct. 7, '79.
<i>Harvey, R. J.</i>	- - Jan. 6, '72	-	Died Dec. 28, '81.
Haughton, Rev. S.	- - Nov. 30, '75	-	Rule XXI.
Hayes, Richd.	- - Feb. 17, '80.		
Hayes, Pat	- - Oct. 12, '80	-	Rule XXI.
Heuston, F. T.	- - Feb. 2, '92.		
Kane	- - Dec. 16, '73	-	Resigned.
Lentaigne, J. V.	- - Oct. 14, '84.		
Little, James	- - July 29, '73.		
<i>Little, Thos. E.</i>	- - Jan. 6, '72	-	Died Nov. 10, 1891.
Macalister, A.	- - Feb. 17, '80	-	Resigned.
Macan, A. V.	- - Dec. 13, '72.		
M'Kee, A.	- - Oct. 26, '86	-	Resigned, Oct. 14, '90.
M'Donnell, R.	- - Jan. 20, '72	-	Died May 6, '89.
M'Dowel, B. G.	- - Feb. 3, '72	-	Died Sept. 15, '75.
<i>Moore, J. W.</i>	- - Jan. 6, '72	-	Resigned.
Neville, W.	- - Nov. 8, '81	-	Rule XXI., Oct. 9, '88.
Nixon, C. J.	- - Feb. 3, '74	-	Sec. '75-'78; Treas. '79-'83.

DATE OF ELECTION.

Norman, C.	-	-	
Nugent, G. P.	-	Oct. 12, '80	- Sec. '86-'92.
Patteson, R. G.	-	Oct. 22, '89.	
Peele, Edw.	-	May 4, '75	- Died Feb. 18, 1881.
Purser, J. M.	-	Jan. 6, '72.	
Rainsford, Rd.	-	Jan. 6, '72	- Died Feb. 17, 1880.
Redmond, D.	-	Oct. 21, '79.	
Redmond, J. M.	-	Feb. 2, '92.	
Scott, J. A.	-	-	1888.
Smith, W. G.	-	April 5, '72	- Resigned ; re-elected Feb. 7, '82.
Smyly, W. J.	-	Nov. 7, '82.	
Stack, Theod.	-	July 1, '73	- Resigned, Oct. 5, '86.
Stoker, W. T.	-	April 19, '72.	
Stokes, Sir Wm.	-	Jan. 29, '84.	
Story, J. B.	-	-	1879.
Swanzy, H. R.	-	Jan. 6, '72.	
Thomson, W.	-	Dec. 13, '72	- Resigned, 1891.
Tobin, R.	-	Mar. 24, '91	
Todhunter, J.	-	Jan. 6, '72	- Hon. Member.
Wilson, H.	-	Feb. 3, '72	- Died June, 1877.
Woodhouse, S.	-	Dec. 12, '76	- Resigned.
Wright, W. M.	-	Nov. 8, '81.	
Yeo, G. F.	-	Jan. 6, '72	- Hon. Member, 1875 ; Sec. and Treas., 1874-76.

THE BROOKLYN MEDICAL JOURNAL.

THIS monthly is in its sixth year, but we do not remember to have reviewed a specimen before. The November (1891) issue is before us—64 8vo. pages of professional matter, with a dense integument of advertisements. There are four original articles—one devoted to that obsolescent subject, Dr. Koch's lymph. A section is devoted to Progress in Medicine under eight heads, each in charge of a distinct reporter. From the vital statistics for July we take the following figures:—The estimated population of Brooklyn was 862,155. 2,316 deaths in July give an annual mortality, the report states, of 31·38 per 1,000. For comparison we have the annual mortality of eight other large cities deduced from July death-rate as follows:—New York, 32·85 ; Philadelphia, 24·18 ; Berlin, 18·76 ; Vienna, 25·18 ; Paris, 20·57 ; London, 19·76 ; Glasgow, 23·74 ; Dublin, 21·98. 52 deaths were due to "violence." Total deaths under 5 years were 1,466, under one year 1,126.

SALICYLIC ACID IN CERTAIN FORMS OF CYSTITIS.

DR. J. P. BRYSON says (*Medical News*, Philadelphia, September 26, 1891) that he uses ʒi of a 2 per cent. solution of salicylic acid in glycerine with ʒv of water for washing out the bladders of patients with chronic exudative cystitis. It succeeds when borax fails.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, B.A., M.D., Univ. Dubl.; F.R.C.P.I.;
F. R. Met. Soc.; Diplomate in State Medicine and ex-Sch. Trin. Coll. Dubl.

VITAL STATISTICS

For four Weeks ending Saturday, March 26, 1892.

The deaths registered in each of the four weeks in the sixteen principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000 :—

Towns	Weeks ending				Towns	Weeks ending			
	March 5.	March 12.	March 19.	March 26.		March 5.	March 12.	March 19.	March 26.
Armagh -	0·0	14·0	21·0	35·0	Limerick -	19·6	25·3	35·1	35·1
Belfast -	33·4	32·8	34·4	27·1	Lisburn -	38·5	12·8	21·4	30·0
Cork -	38·1	30·4	21·5	37·4	Londonderry	18·8	15·7	18·8	20·4
Drogheda	52·7	65·9	22·0	35·1	Lurgan -	22·8	27·4	36·5	31·9
Dublin -	31·5	34·0	35·9	39·1	Newry -	20·1	36·2	16·1	28·2
Dundalk -	25·1	0·0	20·9	29·3	Sligo -	61·9	10·3	25·8	10·3
Galway -	37·8	41·6	22·7	49·1	Waterford -	42·5	15·0	30·0	20·0
Kilkenny	33·0	51·9	47·2	33·0	Wexford -	9·0	27·1	22·6	40·6

In the week ending Saturday, March 5, 1892, the mortality in thirty-three large English towns, including London (in which the rate was 18·9), was equal to an average annual death-rate of 20·5 per 1,000 persons living. The average rate for eight principal towns of Scotland was 22·5 per 1,000. In Glasgow the rate was 24·9, and in Edinburgh it was 17·3.

The average annual death-rate represented by the deaths registered during the week in the sixteen principal town districts of Ireland was 31·9 per 1,000 of the population (unrevised) according to the recent Census.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 2·5 per 1,000, the rates varying from 0·0 in seven of the districts to 5·2 in Sligo—the 12 deaths from all causes registered in that district comprising 1 from diarrhoea. Among the 164 deaths from all causes registered in Belfast are 2 from measles, 2 from scarlatina, 3 from whooping-cough, 1 from diphtheria, 1 from

simple continued fever, 1 from enteric fever, 4 from diarrhoea, 26 from phthisis, and 37 from diseases of the respiratory system. The 55 deaths in Cork comprise 1 from typhus, 2 from whooping-cough, 9 from phthisis, and 15 from diseases of the respiratory system.

In the Dublin Registration District the registered births amounted to 224—123 boys and 101 girls; and the registered deaths to 219—109 males and 110 females.

The deaths, which are 13 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 32·7 in every 1,000 of the population. Omitting the deaths (numbering 8) of persons admitted into public institutions from localities outside the district, the rate was 31·5 per 1,000. During the first nine weeks of the current year the death-rate averaged 38·8, and was 6·1 over the mean rate in the corresponding period of the ten years 1882–1891.

Thirty-five deaths from zymotic diseases were registered, being 1 over the number for the preceding week, and 12 in excess of the average for the ninth week of the last ten years. They comprise 7 from measles, 8 from influenza and its complications, 8 from whooping-cough, 4 from enteric fever, 1 from diarrhoea, and 1 from dysentery.

The number of cases of enteric fever admitted to hospital is 8, being a decline of 8 as compared with the admissions for the preceding week, but 3 over the number for the week ended February 20. Eight enteric fever patients were discharged, and 65 remained under treatment on Saturday, being equal to the number in hospital at the close of the preceding week.

Eighteen cases of measles were admitted to hospital against 10 for the preceding week. Thirty-one cases of this disease remained under treatment in hospital at the close of the week.

The hospital admissions for the week include, also, 4 cases of scarlatina and 1 case of typhus. Nine cases of the former and 2 of the latter disease remained under treatment in hospital on Saturday.

Deaths from diseases of the respiratory system, which had risen from 61 for the week ended February 20, to 65 for the following week, fell to 44, or 6 under the average for the corresponding week of the last ten years. They comprise 30 from bronchitis, 11 from pneumonia or inflammation of the lungs, and 1 from pleurisy.

In the week ending Saturday, March 12, the mortality in thirty-three large English towns, including London (in which the rate was 22·1), was equal to an average annual death-rate of 22·9 per 1,000 persons living. The average rate for eight principal towns of Scotland was 22·6 per 1,000. In Glasgow the rate was 25·7, and in Edinburgh it was 17·9.

The average annual death-rate in the sixteen principal town districts

of Ireland was 31·3 per 1,000 of the population (unrevised) according to the recent Census.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 2·4 per 1,000, the rates varying from 0·0 in nine of the districts to 8·8 in Drogheda—the 15 deaths from all causes registered in that district comprising 2 from enteric fever. Among the 161 deaths from all causes registered in Belfast are 5 from measles, 2 from scarlatina, 4 from whooping-cough, 1 from diphtheria, 2 from enteric fever, 1 from diarrhoea, 26 from phthisis, and 45 from diseases of the respiratory system. The 18 deaths in Limerick comprise 1 from typhus and 1 from whooping-cough. The Registrar of Waterford No. 1 District specially reports 1 death from influenza.

In the Dublin Registration District the registered births amounted to 207—109 boys and 98 girls; and the registered deaths to 238—125 males and 113 females.

The deaths, which are 15 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 35·5 in every 1,000 of the population. Omitting the deaths (numbering 10) of persons admitted into public institutions from localities outside the district, the rate was 34·0 per 1,000. During the first ten weeks of the current year the death-rate averaged 38·5, and was 5·7 over the mean rate in the corresponding period of the ten years 1882–1891.

The number of deaths from zymotic diseases registered is 32, being 6 over the average for the corresponding week of the last ten years, but 3 under the number for the week ended March 5. The 32 deaths comprise 12 from measles (against 7 from that disease for the preceding week), 9 from influenza and its complications, 6 from whooping-cough (being 2 under the number from that cause in each of the two weeks preceding), 1 from diarrhoea, 1 from dysentery, and 1 from erysipelas.

Nine cases of enteric fever were admitted to hospital, being 1 in excess of the admissions for the preceding week, but 7 under the number for the week ended February 27. Thirteen enteric fever patients were discharged, and 61 remained under treatment on Saturday, being 4 under the number in hospital on Saturday, March 5.

Twenty-eight cases of measles were admitted to hospital against 18 for the preceding week, and 10 for the week ended February 27. Six patients were discharged, 2 died, and 51 remained under treatment on Saturday, being 20 in excess of the number in hospital at the close of the preceding week.

The hospital admissions for the week include, also, 1 case of typhus and 3 cases of scarlatina. Three cases of the former and 12 of the latter disease remained under treatment in hospital on Saturday.

Fifty-six deaths from diseases of the respiratory system were registered, being 1 over the average for the corresponding week of the last ten

years, and 12 over the number for the week ended March 5. They comprise 39 from bronchitis and 12 from pneumonia or inflammation of the lungs.

In the week ending Saturday, March 19, the mortality in thirty-three large English towns, including London (in which the rate was 24·2), was equal to an average annual death-rate of 24·8 per 1,000 persons living. The average rate for eight principal towns of Scotland was 24·2 per 1,000. In Glasgow the rate was 28·8, and in Edinburgh it was 22·8.

The average annual death-rate represented by the deaths registered in the sixteen principal town districts of Ireland was 32·1 per 1,000 of the unrevised population based on the Census of 1891.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 2·6 per 1,000, the rates varying from 0·0 in eleven of the districts to 4·6 in Lurgan—the 8 deaths from all causes registered in that district comprising 1 from diarrhoea. Among the 169 deaths from all causes registered in Belfast are 12 from measles, 4 from whooping-cough, 1 from diphtheria, 1 from enteric fever, 27 from phthisis, and 46 from diseases of the respiratory system.

In the Dublin Registration District the registered births amounted to 184—96 boys and 88 girls; and the registered deaths to 247—136 males and 111 females.

The deaths, which are 37 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 36·8 in every 1,000 of the population. Omitting the deaths (numbering 6) of persons admitted into public institutions from localities outside the district, the rate was 35·9 per 1,000. During the first eleven weeks of the current year the death-rate averaged 38·4, and was 5·8 over the mean rate in the corresponding period of the ten years 1882–1891.

Thirty-nine deaths from zymotic diseases were registered, being 7 over the number for the preceding week and 17 in excess of the average for the eleventh week of the last ten years. They comprise 12 from measles (being equal to the number of deaths from that disease for the preceding week), 2 from scarlet fever (scarlatina), 6 from influenza and its complications, 5 from whooping-cough, 3 from enteric fever, and 2 from dysentery.

Only 3 cases of enteric fever were admitted to hospital, being a decline of 6 as compared with the admissions for the preceding week; 14 enteric fever patients were discharged, and 50 remained under treatment on Saturday, being 11 under the number in hospital on Saturday, March 12.

The number of cases of measles admitted to hospital is 21, being 7 under the admissions for the preceding week. Eight patients were dis-

charged, and 64 remained under treatment on Saturday, being 13 over the number in hospital at the close of the preceding week.

The hospital admissions include, also, 4 cases of scarlatina, but no cases of typhus were received. Twelve cases of the former and 3 of the latter disease remained under treatment in hospital on Saturday.

The number of deaths from diseases of the respiratory system registered is 55, being 6 over the average for the corresponding week of the last ten years, but 1 under the number for the week ended March 12. The 55 deaths comprise 43 from bronchitis, and 9 from pneumonia or inflammation of the lungs.

In the week ending Saturday, March 26, the mortality in thirty-three large English towns, including London (in which the rate was 21·3), was equal to an average annual death-rate of 22·3 per 1,000 persons living. The average rate for eight principal towns of Scotland was 23·4 per 1,000. In Glasgow the rate was 26·2, and in Edinburgh it was 19·6.

The average annual death-rate in the sixteen principal town districts of Ireland was 33·3 per 1,000 of the population (unrevised) according to the recent Census.

The deaths from the principal zymotic diseases registered in the sixteen districts were equal to an annual rate of 3·2 per 1,000, the rates varying from 0·0 in seven of the districts to 4·7 in Kilkenny—the 7 deaths from all causes registered in that district comprising 1 from diarrhœa. Among the 133 deaths from all causes registered in Belfast are 6 from measles, 1 from scarlatina, 2 from whooping-cough, 3 from diphtheria, 1 from simple continued fever, 5 from diarrhœa, 17 from phthisis, and 48 from diseases of the respiratory system.

In the Dublin Registration District the registered births amounted to 220—120 boys and 100 girls; and the registered deaths to 269—111 males and 158 females.

The deaths, which are 50 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 40·1 in every 1,000 of the population. Omitting the deaths (numbering 7) of persons admitted into public institutions from localities outside the district, the rate was 39·1 per 1,000. During the first twelve weeks of the current year the death-rate averaged 38·5, and was 5·8 over the mean rate in the corresponding period of the ten years 1882–1891.

The number of deaths from zymotic diseases registered is 39, being equal to the number for the preceding week and 15 in excess of the average for the twelfth week of the last ten years. The 39 deaths comprise 22 from measles (being 10 over the number of deaths from that disease in each of the two weeks preceding), 6 from influenza and its complications, 5 from whooping-cough, 1 from enteric fever, 2 from diarrhœa, and 1 from dysentery.

The cases of measles admitted to hospital amounted to 48, against 21 for the preceding week and 28 for the week ended March 12. Ten measles patients were discharged, 2 died, and 100 remained under treatment on Saturday, being 36 over the number in hospital at the close of the preceding week.

As in the week preceding, there were but 3 cases of enteric fever admitted to hospital; 6 enteric fever patients were discharged, and 47 remained under treatment on Saturday, being 3 under the number in hospital on Saturday, March 19.

No cases of either scarlatina or typhus were received. Twelve cases of the former and 3 of the latter disease remained under treatment in hospital on Saturday.

Deaths from diseases of the respiratory system amount to 63, or 10 in excess of the average for the corresponding week of the last ten years and 8 over the number for the week ended March 19. They comprise 44 from bronchitis and 11 from pneumonia or inflammation of the lungs.

METEOROLOGY.

*Abstract of Observations made in the City of Dublin, Lat. 53° 20' N.
Long. 6° 15' W., for the Month of March, 1892.*

Mean Height of Barometer,	-	-	-	30·057 inches.
Maximal Height of Barometer (on 22nd, at 9 p.m.),				30·687 „
Minimal Height of Barometer (on 15th, at 1 p.m.)				29·138 „
Mean Dry-bulb Temperature,	-	-	-	37·8°.
Mean Wet-bulb Temperature,	-	-	-	35·7°.
Mean Dew-point Temperature,	-	-	-	32·2°.
Mean Elastic Force (Tension) of Aqueous Vapour,	-			·187 inch.
Mean Humidity,	-	-	-	80·2 per cent.
Highest Temperature in Shade (on 17th)	-			59·2°.
Lowest Temperature in Shade (on 11th),	-			23·8°.
Lowest Temperature on Grass (Radiation) (on 11th),				16·9°.
Mean Amount of Cloud,	-	-	-	53·4 per cent.
Rainfall (on 9 days),	-	-	-	·991 inch.
Greatest Daily Rainfall (on 14th),	-	-	-	·400 inch.
General Directions of Wind,	-	-	-	E., N.W., N.E.

Remarks.

A remarkably cold, dry month, with scanty rainfall and a great prevalence of searching winds from polar quarters. The arithmetical mean temperature was only 39·1°, or 2·2° below that of February. The rainfall did not amount quite to an inch and was distributed over only 9 days. The week ending Saturday, the 12th, was the coldest experienced in Dublin during the winter of 1891-92, and had it not been for a temporary rise of the thermometer to 55·7° on the 31st, the month would

have proved the coldest March on record in Dublin within the past thirty years at least. The amount of cloud was only 45·5 per cent. at 9 p.m., so that radiation by night was very active.

In Dublin the arithmetical mean temperature ($39\cdot1^{\circ}$) was considerably below the average ($43\cdot1^{\circ}$); the mean dry bulb readings at 9 a.m. and 9 p.m. were $37\cdot8^{\circ}$. In the twenty-seven years ending with 1891, March was coldest in 1867 and 1883 (M. T. = $39\cdot0^{\circ}$), and warmest in 1868 (M. T. = $47\cdot3^{\circ}$). In 1876 the M. T. was $41\cdot1^{\circ}$, in 1879 (the cold year) it was $42\cdot5^{\circ}$, in 1888 it was as low as $39\cdot8^{\circ}$, in 1889 it was $44\cdot0^{\circ}$, and in 1890 it was as high as $45\cdot1^{\circ}$. In 1891, it was only $41\cdot7^{\circ}$. As a general rule, February in Dublin is only a shade colder than March. This is due to the fact that the Continental anticyclone usually embraces the British Isles and Scandinavia in March, causing easterly winds. In the present year, however, February was actually $2\cdot2^{\circ}$ warmer than March.

The mean height of the barometer was 30·057 inches, or 0·141 inch above the corrected average value for March—namely, 29·916 inches. The mercury rose to 30·687 inches at 9 p.m. of the 22nd, and fell to 29·138 inches at 1 p.m. of the 15th. The observed range of atmospheric pressure was, therefore, 1·549 inches—that is, more than an inch and a half.

The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was $37\cdot8^{\circ}$, or $3\cdot0^{\circ}$ below the value for February, 1892. Using the formula, *Mean Temp.* = *Min.* + (*max*—*min.* \times ·485), the M. T. becomes $38\cdot9^{\circ}$. The arithmetical mean of the maximal and minimal readings was $39\cdot1^{\circ}$, compared with a twenty-five years' average of $43\cdot1^{\circ}$. On the 17th the thermometer in the screen rose to $59\cdot2^{\circ}$ —wind, S.S.W.; on the 11th the temperature fell to $23\cdot8^{\circ}$ —wind, N.W. The minimum on the grass was $16\cdot9^{\circ}$, also on the 11th.

The rainfall was only ·991 inch, distributed over only 9 days. The average rainfall for March in the twenty-five years, 1865–89, inclusive, was 2·061 inches, and the average number of rainy days was 16·5. The rainfall, therefore, was much below the average, while the rainy days were also much below it. In 1867 the rainfall in March was very large—4·972 inches on 22 days; in 1888, 3·753 inches fell on 18 days; in 1866 also 3·629 inches fell on 21 days. On the other hand, in 1871, only ·815 of an inch was measured on 12 days, and in 1874 only ·953 of an inch fell, also on 12 days. In 1887 (the “dry year”), 1·485 inches of rain fell on 15 days; in 1889, 1·076 inches fell on, however, as many as 17 days; in 1890 the fall was as much as 3·693 inches on 17 days; but in 1891 only ·936 of an inch fell on 16 days.

The atmosphere was thick with dry smoke fog in the city on the 4th, 6th, 7th, 12th, 20th, 21st, 24th, 29th, 30th, and 31st. High winds were noted on only 4 days, reaching the force of a gale on only one occasion,

the 18th. Snow or sleet occurred on the 2nd, 3rd, 9th, 10th, 13th, 14th, and 27th; and hail fell on the 1st, 2nd, 6th, 7th, 9th, 12th, 14th, 21st, 27th, and 28th. The temperature exceeded 50° in the screen on only 7 days, compared with 9 days in March, 1891, and 19 days in March, 1890; while it fell to or below 32° in the screen on as many as 16 nights, compared with 10 nights in March, 1891, and only 4 nights in March, 1890. The minima on the grass were 32° , or less, on 25 nights, compared with 20 nights in March, 1891, and 16 nights in March, 1890. On 9 days the thermometer did not rise to 40° in the screen.

Very cold weather and parching winds with frequent, although not heavy, falls of snow, were reported from all parts of the United Kingdom and from the Continent during the period ending Saturday, the 5th. Displays of aurora borealis were of frequent occurrence in Scotland and Scandinavia. The prevailing type of distribution of atmospherical pressure was anticyclonic in the north, cyclonic in the south. Hence easterly winds blew all over Central Europe and the British Islands. They were accompanied by dense clouds, and snow was in the air day after day, although the total fall did not yield a large rainfall measurement. On Wednesday and Thursday the thermometer did not rise above 32° all over the S.E. of England either by night or by day. In Dublin showers of sleety rain and hail fell on Tuesday, the 1st, and light snow was observed at frequent intervals on Wednesday and Thursday. On Friday evening the sky cleared temporarily, so that sharp frost set in. The clouds soon returned, however, but finally dispersed on Saturday afternoon, which proved fine and bright. In Dublin the barometer rose to 30·399 inches at 9 p.m. of Friday (wind, S.E.). On Tuesday the thermometers in the screen rose to $42\cdot9^{\circ}$; on Friday they fell to $29\cdot2^{\circ}$. The rainfall was ·034 inch on two days, nearly all of which fell as hail and snow. On Tuesday the measurement was ·028 inch. The wind blew constantly from points between N.E. and S., chiefly from E.

Extremely cold, winter-like weather held throughout the week ended Saturday, the 12th, the mean temperature of which in Dublin was lower than that of any other week during the past or rather current winter. At the beginning a large anticyclone stretched southwestwards from Scandinavia, across the North Sea and the British Islands, causing easterly winds and cold, but dry weather. At this time deep depressions were advancing over the Iberian Peninsula from the southward, and were accompanied in that region by high temperatures, heavy rains, and gales. On Tuesday, however, a brisk and decided fall of the barometer took place in the North also, as an extensive depression formed over the Norwegian Sea. This system enlarged and spread southwards down the North Sea, causing strong W. to N. and N.E. winds and considerable falls of hail and snow in the British Islands. On Wednesday night another well-marked cyclonic system travelled rapidly southeastwards

across Scotland and England, renewing the storms of hail and snow. On Thursday night thunder and lightning occurred at Wick and Shields. Severe frost was reported from many stations on nearly every night during the week. On Friday the weather moderated in Ireland, but temperature remained very low generally. In Dublin the mean pressure was 29·792 inches, the barometer being observed to range from 30·182 inches on Sunday at 9 a.m. (wind, calm) to 29·426 inches on Thursday at 7 30 a.m. (wind, N.N.W.)—the reading had been lower about 6 a.m. The corrected mean temperature was 33·6°. The mean dry bulb readings at 9 a.m. and 9 p.m. were 32·2°. On Tuesday the screen thermometers rose to 44·4°, on Friday they fell to 23·8°, when also the minimum on the snow was 16·9°. The rainfall was ·215 inch, on three days. The precipitation was almost wholly in the form of snow and hail. The prevailing winds were N.W. and E.N.E.

The week ended Saturday, the 19th, is remarkable for a sudden bound from midwinter into spring. On Sunday morning the centre of a well-defined depression, which had crossed the Continent from Austria, was found over the North Sea off the coasts of Lincolnshire and Norfolk. The weather was very cold throughout the British Islands, and snow fell in many places. On Monday morning the same depression had advanced to Scotland, which country it covered completely, causing a continuance of wintry weather. At night the barometer fell fast as a new disturbance approached Ireland from the westward. The centre of this system passed in an easterly direction across St. George's Channel, South Wales, and central England to Holland, which it reached on Wednesday morning. It was accompanied by a decided rise of temperature and heavy rains in Ireland, England, and France, while the cold 'stiffened' in Scotland. On Wednesday morning the thermometer fell to 6° at Nairn, and even at 8 a.m. the temperature was only 13° at that station, compared with 51° at Valentia Island in Kerry. A new depression on Wednesday night caused a warm S.W. wind all over the British Islands, the thermometer rising 32° in 24 hours at Nairn. High day temperatures now set in, the thermometer recording 59° on Thursday in London and Dublin, as well as at Parsonstown and Cambridge. On Friday the maximum was in London 61°, at Leith 62°, and at Cambridge 63°. At this time it blew hard in Ireland from S.S.E., but the weather was in other respects chiefly fine. Saturday was a lovely spring-like day. In Dublin the mean atmospherical pressure was 29·736 inches, the barometer ranging between 29·138 inches at 1 p.m. of Tuesday and 30·129 inches at 9 a.m. of Saturday (wind on both occasions being about E.S.E.). The corrected mean temperature was 43·9°, the mean dry bulb temperature at 9 a.m. and 9 p.m. was 42·9°. On Sunday the screened thermometers fell to 26·8°, on Thursday they rose to 59·2°. The rainfall was ·576 inch on two days, ·400 inch being referred to Monday. Snow fell on Sunday

and Monday. The prevailing winds were S.W. and S.E. At the close of the week a vast anticyclone had spread all over northern and western Europe from Russia, where the barometer exceeded 31 inches.

During the week ended Saturday, the 26th, so far as Ireland is concerned, the weather was exceptionally fine and dry. The amount of cloud, however, was great, and temperature ruled rather low. At the beginning of the week an anticyclone, with central readings of the barometer above 30·8 inches, lay over the Baltic, while pressure was rather below 30 inches over the Bay of Biscay. An easterly wind consequently prevailed, but in Dublin dense cirri came up from W. in a higher air-current all day on Sunday. Next day the barometer rose steadily in Ireland and England as a new anticyclone spread in from the westward. This system developed until Wednesday, when the barometer rose to 30·76 inches at Belmullet, in Mayo. In Dublin a hail shower fell on Monday afternoon, Tuesday proved very fine, but early on Wednesday morning the sky became densely overcast, remaining so until Saturday. In this interval the anticyclone was dispersing, and an extreme reduction of pressure took place which was most decided over Northern Europe, so that at 8 a.m. of Saturday the barometer was as low as 28·75 inches at Bodø in Norway. Notwithstanding this and because the fall of the barometer was uniform and general, no very bad weather followed. In Dublin the mean height of the barometer was 30·253 inches, pressure ranging from 30·687 inches at 9 p.m. of Tuesday (wind, N.W.) to 29·640 inches at 4 p.m. of Saturday (wind, W.S.W.). The corrected mean temperature was 42·7°. The mean dry bulb readings at 9 a.m. and 9 p.m. were 42·2°. The screened thermometers rose to 51·5° on Monday and fell to 33·0° on Tuesday. The winds were light and variable, chiefly from polar quarters. The amount of cloud was 71·4 per cent. There was a considerable rainfall over south-eastern England on Monday and Tuesday, and snow fell in Scotland on Saturday, but in Dublin no measurable rainfall occurred until Saturday night, when ·143 inch of rain was registered.

The closing period of the month (27th–31st, inclusive) was again very cold, the night-frosts being particularly sharp. Owing, however, to the clearness of the sky and the continuous bright sunshine by day temperature showed a decided tendency to recover on the 30th and 31st. On the latter day the maximum was 55·7° in Dublin, but readings as high as 68° were recorded at York and Loughborough, and in Ireland the thermometer rose to 63° at Parsonstown and to 64° at Donaghadee. At the beginning of this period the Dublin mountains were deeply covered with snow. From the 28th an anticyclone stretched across Ireland and central England.

The rainfall in Dublin during the three months ending March 31st has amounted to 4·808 inches on 48 days, compared with only 1·650 inches

on only 32 days during the same period in 1891, 7·470 inches on 45 days in 1890, 5·738 inches on 53 days in 1889, 6·097 inches on 41 days in 1888, and a twenty-five years' average of 6·411 inches on 51·0 days (1865–1889, inclusive).

At Knockdolian, Greystones, Co. Wicklow, only ·995 inch of rain fell on 9 days during March; and the total rainfall since January 1, 1892, equals 4·205 inches on 40 days.

PERISCOPE.

A CASE OF MYXŒDEMA SUCCESSFULLY TREATED BY MASSAGE AND HYPO- DERMIC INJECTIONS OF THE THYROID GLAND OF A SHEEP.

DR. WALLACE BEATTY, Senior Assistant Physician to the Adelaide Hospital, Dublin, writes as follows in the *British Medical Journal*, March 12, 1892:—"On October 7, 1891, a married lady, aged forty-five, the mother of several children, came to consult me. I had heard a few days previously from a friend of hers that her ill-health had existed for about five or six years, and that the symptoms had been steadily progressive. Naturally an active, bright, sweet-tempered woman, quick in articulation, and possessed of an excellent memory, she became gradually more and more easily tired, and suffered from lassitude; her speech became slow; her memory impaired; her temper irritable and easily ruffled by trivial causes; she found walking difficult; constipation, which had always been a trouble, became more so; she suffered much from cold.

"On examination of the patient it was quite clear that she was suffering from myxœdema. Her face was swollen, waxy-looking, and anæmic; there was a well-marked and circumscribed pink flush on her cheeks, contrasting markedly with the pale, swollen skin of the rest of the face. The eyelids were swollen, and looked œdematous. The alæ nasi were thickened and the nose broadened. The lips were thickened, and the tongue seemed too large for her mouth, and evidently interfered somewhat with articulation. The mucous membrane of the oral cavity had a pale, swollen appearance. The hands were enlarged and clumsy; her rings, which at one time had been loose, were now too tight for her finger, and could not be removed. The feet were enlarged; the skin of the feet and legs seemed thickened, and there was some œdema present. No trace of the thyroid gland could be made out. There was no fulness above the outer half of each clavicle, such as is often present in myxœdema. Her heart sounds were normal; the pulse was slow and feeble. The urine was free from albumen and sugar. Her hair had become thin. Menstruation had become irregular, having occurred only three times since October, 1890, the last period having come about a week before I saw her. The account

she gave of herself was very much the same as that given to me by her friend. She told me that she had taken various tonics, and had been at Homburg, where she had taken steel 'both inside and outside.'

"I need hardly say that I could not hold out much hope that any treatment would succeed; still, as I had read that some cases of myxœdema were fairly curable by massage, I suggested that a consultation should be held with a view to the consideration of this treatment. Dr. Head was asked to see her. He confirmed my diagnosis, and considered that a thorough course of massage ought to be tried. Accordingly, on October 21 she went into a private hospital, and treatment was commenced. On October 24 I asked Dr. Purser to see her and to examine her blood. He agreed with Dr. Head and me that there could be no doubt as to the nature of the case. He examined her blood, and found the percentage of hæmoglobin to be 70 per cent. of the normal. Dr. Head, Dr. Purser, and I, about this time, discussed the advisability of adopting the treatment which had been used by Dr. George R. Murray, of Newcastle-on-Tyne, with considerable success—namely, the hypodermic injection of an extract of the thyroid gland of a sheep.^a We decided to pursue the treatment by massage alone for five or six weeks, and then, if no decided improvement had taken place in her condition, to adopt Dr. Murray's treatment.

"Dr. Purser made a second examination of the blood on November 27—that is, five weeks after his first examination; he found the percentage of hæmoglobin to be 75. In the second week of December there was no doubt that an improvement had taken place in the patient's condition—the face was less swollen, the hands were somewhat less clumsy, the rings were looser, the pulse had improved, menstruation had occurred twice since her admission to the hospital (on November 18 and on December 7), and was natural in its character; the masseuse, who had found great difficulty in pinching up the thickened skin at the commencement of the treatment, had no longer this difficulty to deal with, at least to the same extent. Still the improvement was not sufficient to lead us to hope that a prolonged course of massage would effect even a partial cure. Accordingly we determined, while continuing the massage treatment, to give hypodermic injections of a sheep's thyroid gland. Dr. Purser kindly made the first extract for me, and gave the first injection; this was given on December 11—that is, on the fifty-first day of the massage treatment. The extract was made according to the directions given by Dr. Murray, with one or two unimportant modifications. The method adopted was as follows:—

"The lobes of the thyroid gland of a sheep were removed immediately after it was killed, the instruments used having been rendered aseptic. The surrounding fat and connective tissue were removed from the lobes.

^a *British Medical Journal*, October 10, 1891.

Each lobe was cut up into small pieces on a glass dish, the glass dish having been previously washed with a 1 in 20 solution of carbolic acid. The pieces were put into two sterilised test tubes, one for each gland, and over them was poured, in sufficient quantity to cover them, a solution containing a $\frac{1}{2}$ per cent. solution of carbolic acid and glycerine in equal part. The test tubes were left in a cool place for twenty-four hours. The contents were then strained through fine muslin into a glass-stoppered bottle, and the muslin squeezed so as to express as much liquid as possible; the muslin was previously placed for a few minutes in boiling distilled water, and the bottle was also previously disinfected.

"The extract so prepared from the two lobes of one thyroid gland was given in three parts, with two days' interval between. The patient experienced no unpleasant sensations. I have continued the injections, and have given up to the present (February 13th, 1892) the extracts of five thyroid glands. Each extract I have given in three separate injections within a week after its preparation. The time between the administration of each set of injections has varied from four to ten days.

"The effect of the injections has been really marvellous. A marked improvement in the patient's condition was noticeable within one week, so much so that her husband, who saw her on December 15th for the first time since her admission to the hospital, was delighted with the change in his wife's condition. He told me that he could not have believed the change possible. She left the hospital on December 16th, and returned home. Massage was continued for seven weeks longer, the patient, however, being permitted to go about the house, and to take short walks daily out-of-doors.

"The improvement has steadily progressed. Now she is practically cured—the face looks natural, the skin of the face is now no longer thickened, but is thin and wrinkled; the eyelids are not swollen; the lips are natural; the tongue is of natural size; speech is rapid and easy; the hands are no longer clumsy, she can give a hearty and firm 'shake-hands;' her rings are loose and easily removable; her movements are active; her hair, which had become thin, is now growing thickly; her memory has returned; menstruation is natural. No physician, seeing her now for the first time, could recognise the case as one of myxœdema."

THE LATE DR. D. HAYES AGNEW OF PHILADELPHIA.

THE following Minute on the death of Dr. D. Hayes Agnew was adopted by the College of Physicians of Philadelphia, on March 24, 1892:—
"The death of Dr. D. Hayes Agnew, recently President of the College, in the seventy-fourth year of his age, and after a life crowned with honour and usefulness, calls for an expression of the sense entertained by the College of the gravity of the loss which it suffers, in common with the profession he adorned, the charitable institutions he served, and

the community in which his skill did so much to lessen suffering and death.

“He began his professional life with no adventitious aids; yet, by incessant industry, indomitable perseverance, and singleness of purpose, he attained to its highest rank. No temptation distracted his attention from the goal of his life—neither extraneous science, nor general literature, nor the allurements of art, nor the pleasures of society.

“The undivided strength of his mind and his affections were devoted to enlarging the domain of surgery, not only in its operative methods—which he always subordinated to the welfare of his patients—but also in preparing for his profession a literary monument that might speak for him when his voice should be no longer heard.

“His minute acquaintance with anatomy and his ambidextrous skill enabled him to perform, with ease to himself and safety to his patients, operations which less accomplished surgeons hesitated to undertake.

“He possessed a certain magnetism of manner, quite independent of formality, that evidently proceeded from the heart, and drew all hearts to himself. Never frivolous, but always cheerful, he was dignified, grave and earnest, making all who heard him as a teacher and speaker, or in familiar intercourse, recognise in him, above all other things, the upright man. For he possessed eloquence of conviction and the force of absolute honesty in all his statements, and thereby drew to himself, as enthusiastic admirers and disciples, the successive classes of students whom he taught.

“The College—desiring to show respect for the purity, uprightness, unselfishness, and modesty of Dr. Agnew’s character; its admiration for the noble example of his life; and its sense of the value of his contributions to the science and art of surgery—directs that this Minute shall be duly recorded, and a copy of it, signed by the President and Secretary, be conveyed to Dr. Agnew’s family. Also, that the College will attend the funeral in a body, and that the President be requested to appoint a Fellow to prepare a memoir of our late colleague.”

EXCISION OF APEX OF LUNG.

THIS heroic operation is reported, the *N. Y. Medical Record* informs us, in *La Gazetta Medica di Granada*. Dr. Tuffieri exhibited his patient, cured, before the Surgical Society. Having satisfied himself by preliminary experiments on lower animals, that the operation might be performed with safety, he cut “through skin and some fibres of the pectoralis major, laid bare the intercostal muscles of the second intercostal space, and exposed the parietal layers of the pleura, which he detached from the thoracic parietes. Opening the pleura, he found the lung apex studded with tubercle and slightly shrunk. Round the apex he passed a ligature, which he attached to the second rib, and then excised five centimetres of the tuberculous mass.”

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

Caffyn's Jelly-Carnis and Carnis Suppositories.

ON more than one occasion we have spoken in terms of approbation of the preparations of the Liquor Carnis Company. Of the nutritive and restorative value of the preparation from which the Company takes its name, a signal instance has recently come under our notice. A little boy, aged three years, was attacked with catarrhal pneumonia while passing through whooping-cough. He remained seriously ill for several days, when he was ordered a teaspoonful of the "Liquor Carnis" every three hours. He took to it kindly, and in a very short time showed a marked improvement in looks and strength. He soon began to take food, against which he had completely turned, and made a quick recovery.

The Company have lately introduced two new preparations, each useful in its own way. One of these is the "Jelly-Carnis," for which it is claimed that it represents a highly nourishing, stimulating, and palatable food and tonic, containing carbon for heat production and nitrogenous compounds for the nutrition of the tissues in proper proportions, and free from all irritating qualities. Experiments show that gelatine, while not itself a food-stuff capable of supporting life or of replacing albumen in tissue growth and repair, is an albumen-sparing substance, and is readily digested. There is evidence that it is an economical addition to proteid food-stuffs. The "Jelly-Carnis" contains 66 per cent. of Caffyn's liquor carnis. Its sweet taste is, doubtless, due to the presence of glycerine, and it is flavoured with celery. It may be eaten cold or taken in soup in the proportion of a dessertspoonful every hour for an adult.



The other novel preparation is the suppository, which contains the equivalent of two drachms of the liquor carnis. It is prepared by a special process in which the muscle-plasma (myosin, &c.) is entirely unchanged, and its assimilative properties are unimpaired. Gelatine is the colloid medium used in the preparation of the carnis suppository, one or two of which may be administered every three hours in cases where rectal feeding is indicated owing to organic disease of the œsophagus or stomach.

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PART I.

ORIGINAL COMMUNICATIONS.

ART. XIX.—*Rhinoscleroma*.^a By W. G. T. STORY, M.B.; Clinical Assistant in St. Mark's Ophthalmic Hospital, Dublin.

THE disease known as Rhinoscleroma was first described by Hebra in 1870. In the cases seen by him the nose and adjacent parts, more especially round the external orifices of the nose, were swollen and infiltrated and very hard to the touch, and it was owing to this feature that the name Rhinoscleroma was given to it by Hebra, who supposed that it was of a sarcomatous nature. Since then, however, numerous other cases have been seen and described in Austria, Russia, Germany, Italy, and in Central America; and it has been found that the nose is not always either the starting-point or the seat of the disease.

The usual course of the disease is as follows:—After a history of long-standing nasal catarrh, accompanied in some cases by a tendency to bleeding, a chronic hypertrophic inflammation of the mucous membrane is observed; this generally commences at the choanæ, and may spread thence towards the anterior nares, the lips and gums, causing all these parts to become swollen and hard, or may spread downwards to the soft palate, pillars of the fauces, pharynx and larynx.

The parts attacked become greatly swollen, darker in colour than the surrounding healthy mucous membrane, and very hard to the touch; after a time nodules, also very hard and some of

^a Read before the Section of Pathology of the Royal Academy of Medicine in Ireland, Friday, April 1, 1892.

them as large as a hazel nut, develop on the surface of the swelling, and on these or between them superficial loss of substance may occur, but deep ulceration is almost never seen. The swellings are not painful, but by their size may cause in the nose difficulty of breathing, loss of smell, and blocking of the Eustachian tubes, with consequent deafness and tinnitus; in the lips, mouth, and pharynx difficulties in mastication and deglutition, and in the larynx persistent cough, aphonia, and attacks of dyspnœa, which are the more frequent, as the swellings give off a very sticky secretion which tends to form plugs and crusts: this is the stage of infiltration; it is followed by one of cicatricial contraction, when the swellings disappear and are replaced by cicatricial tissue, at first also very hard but becoming later more fibrous and greatly inclined to contract. This contraction may also cause severe symptoms, more especially stenosis of the larynx and trachea; like the swellings, the cicatricial tissue is covered with smooth thickened epithelium. The conversion into cicatricial tissue commences in the parts first attacked, so that in an old case it is often found to have taken place in the more central parts, while fresh nodules of infiltration are still appearing at the periphery. The disease is very chronic in its course; it is generally seen in young adults, though cases have been observed in children and in old persons; except indirectly, it does not seem to affect the general health.

Medicinal treatment has been of no avail, and what would seem the most rational method of cure—that is to say, complete removal of the diseased tissues—is so difficult to carry out that I do not know that there has been any quite successful case published; the diseased tissue, though so hard, is surprisingly easy to cut, and the wounds made heal very readily; but it is very hard to get away all the diseased parts, and foci of infection are generally left from which the process may start afresh. Treatment is therefore, to a large extent, palliative: the most important complication—stenosis of the glottis or trachea—being treated by dilatation with bougies or by tracheotomy.

The pathological changes consist in an infiltration of the mucous and submucous tissues with small round cells and spindle cells; among these are to be found a number of large round cells, which have a blown-out appearance, and are named after the observer who first described them—the cells of Mikulicz; the papillæ are enlarged and the epithelium thickened. In old

diseased parts the small-celled infiltration is replaced by dense connective tissue, and the cells of Mikulicz are very scarce, but small masses of so-called hyalin material, very retentive of aniline stains, are to be found, and these are believed by most observers to be a degeneration product of the cells of Mikulicz.

In 1882 Frisch discovered that small bacilli were nearly always present in the cells of Mikulicz and also lying outside them; he was able to make cultivations of these bacilli, but his inoculation experiments were without result. Later, Cornil and Alvarez, and after them Paltauf, and v. Eiselsberg in Vienna, noticed that when stained in certain ways each bacillus might be seen to be surrounded by a capsule of what they supposed to be a colloid material—for instance, when carbol fuchsin was the stain used, the capsules were visible, but when Löffler's methylene blue was used the capsules were unstained, and the bacilli looked therefore much smaller. The bacilli are for the most part contained in the cells of Mikulicz; in these cells a nucleus may often be seen lying at the periphery, as if it had been pushed to one side by the contents of the cell. These bacilli were successfully cultivated in six cases of typical rhinoscleroma by Dr. Paltauf in 1885; the cases were typical of the disease as described by Hebra, as the nose and external nasal orifices were involved; drops of blood or exudation were taken from cuts made in the tumours with the usual precautions, and pure cultures were obtained on gelatine plates and tubes, on agar-agar and potato. On the plates they appeared, after a couple of days, as small round white colonies as large as the head of a pin, and in gelatine tubes in which "Stich-kulturen" were made they took the form of a nail—in fact, were typical "Nagel-kulturen;" they did not liquefy the gelatine. On agar-agar the colonies appeared more rapidly as white translucent masses, about 5 mm. in breadth, and on potato they appeared as a cream-like layer, which spread gradually from the point of inoculation. Under the microscope the cultures were found to be made up of short rod-like bacilli with capsules which could be stained, and of cocci, chiefly diplococci, also with capsules. These micro-organisms resembled therefore exactly those seen in the tissues. They resembled also in a remarkable way, both in their method of growth and in their appearance, the bacilli which had been described by Friedländer as the cause of acute croupous pneumonia.

With these pure cultures inoculation experiments were made, and control inoculations were made with Friedländer's bacillus. The results in each case were very similar—that is to say, that in mice and guinea-pigs inflammation of the pleura and death could be caused, and also local abscesses in the subcutaneous and muscular tissues, but no process resembling rhinoscleroma in man. The rhinoscleroma bacilli were markedly less virulent than Friedländer's bacillus. Rabbits were not affected by either bacillus.

Last year Drs. Paltauf and v. Eiselsberg published 15 more cases in which they have successfully made pure cultures of the bacilli; this makes 42 published cases in which this has been done, and this large number—considering the small number of cases of the disease observed, that in all the cases tried cultivations could be made, and that the bacillus could be always found in hardened sections—may be considered conclusive evidence that the micro-organism is the cause of the disease.

Of these last 15 cases only one was a typical case of the rhinoscleroma of Hebra—that is to say, with hardening of the external parts of the nose, infiltration of the *alæ nasi*, and swellings of the external nasal orifices without ulceration.

In 2 of the cases there was ulceration, which is rare in rhinoscleroma, and in both these it was believed that the ulceration was, if not caused, at least rendered worse by the antisyphilitic treatment, both local and constitutional, to which, owing to mistaken diagnosis, the patients were subjected.

In 5 of the cases the disease never spread to the external orifices of the nose, though the nasal mucous membrane was attacked.

In 7 cases the disease was primary in the larynx or trachea, appearing there as the *chorditis vocalis inferior hypertrophica* described by Gerhardt; in 3 of these, bacilli in the cells of Mikulicz were found; in the other 4 and in 5 other cases where the larynx was involved, no tissue could be got for microscopical examination, though the clinical observations left no doubt as to the nature of the disease.

In 3 cases of suspected rhinoscleroma cultivation experiments gave a negative result, which was confirmed by events—the tumours disappearing under antisyphilitic treatment in one case, and in the others turning out to be of a tubercular and of a carcinomatous nature respectively. Dr. Paltauf concludes, therefore, that cultivation experiments are of great diagnostic value, and in doubtful cases conclusive for or against the nature of the disease.

As to the relationship of the bacillus of rhinoscleroma to that described by Friedländer as the bacillus of croupous pneumonia, it was found that there were points of difference in the cultures:—

1. In tubes containing 1 per cent. of grape sugar, Friedländer's bacillus caused fermentation and complete disappearance of the sugar in 12 days, whereas the bacillus of rhinoscleroma only caused 66 per cent. of the sugar to disappear.

2. Friedländer's bacillus will grow in an acid medium; the other will not.

3. Friedländer's bacillus will coagulate milk, whereas that of rhinoscleroma will not do so.

The bacilli, therefore, though closely allied, are not the same.

I should mention that Dr. Paltauf follows v. Ganghofer in giving up the term rhinoscleroma, as the disease has been shown not to be confined to the nose, and uses instead the expression scleroma of the throat, larynx or nose.

The sections on the table were given to me in Dr. Paltauf's laboratory. The first was stained in hæmotoxylin (Grenacher's), and in it the capsules surrounding the bacilli are so deeply stained that they are not transparent, and the bacilli therefore look large and are easily seen lying inside the large spheroidal cells of Mikulicz.

Under the second microscope is a section from the same specimen stained in carbol fuchsin. In this section the bacilli lying also in the cells of Mikulicz can be seen, but they look smaller: the reason of this is that the capsule is so faintly stained as to be almost invisible, and the small bacilli are seen lying inside it.

These large bacilli holding cells are quite typical of the disease; they are not, as far as I know, seen in any other condition.

ART. XX.—*On Epistaxis and the Hæmorrhoidal Flux: their Pathogenic Unity and Identity of Cure.*^a By ALEXANDER HARKIN, M.D., F.R.C.S.; Consulting Physician, Mater Infirorum Hospital, Belfast; Membre de la Société Française d'Hygiène, Paris.

To the ordinary observer it may not appear that there exists any ætiological or pathological affinity between these two prominent examples of the hæmorrhagic habit; yet, on closer inquiry, it will be found that they are intimately allied in pathogenic origin, in

^a Read before the Ulster Medical Society on Wednesday, May 4, 1892.

their general behaviour, and in the measures necessary for their treatment and effectual cure. Often, on the suppression of an habitual discharge, one or other of these emunctories acts vicariously, thus supplying the deficiency; and it is not at all uncommon for the pituitary membrane at the upper end of the alimentary canal to show its sympathy, by a sudden outburst of blood, when from some cause, whether operative procedure or otherwise, the ordinary hæmorrhoidal flux has been suspended. Epistaxis is a malady of every age and class, most incident to youth, at the period of puberty, and in adolescence—less so in advancing age. During the period of growth and development the cavernous bodies and the nasal erectile tissue are in a state of turgescence, requiring but slight injury to provoke a traumatic attack; and in adolescence, the period of life when the passions have their sway, and fear and joy and anger and grief and sexual excitement play their part, their onset is often marked by spontaneous hæmorrhage from the nose. I was myself cognisant of the case of a Dublin physician of eminence, who felt so acutely at being unjustly reproached by his son, that the blood spouted instantly from his nose to a great distance. Morell Mackenzie justly remarks that the influence of violent emotion in inducing nasal hæmorrhage did not escape the observation of Dickens, who in his story, "Our Mutual Friend," relates that Bradley Headstone, after his murderous attack on Eugene Wrayburne, when under the influence of terror, suffered from frequent discharge from the nostrils. Dr. Girod, of Clement Ferrand, relates the case of a young man under age, his companion in travel, who suffered from intractable and daily epistaxis; suspecting the cause, and gaining the young man's confidence, he confessed that it was due to daily malpractices. Acting on his advice, the young man relinquished the habit, and the hæmorrhage ceased; and Hippocrates, in his *De Morbis Vulgaribus*, writes: "Timochari hieme distillatione in nares præcipio vexata post veneris usum cuncta resiccata sunt."

Epistaxis also sometimes presents itself as a symptom or concomitant of cardiac and hepatic, of renal and febrile affections, and of acute rheumatism with pronounced endocarditis or hypertrophy of the left ventricle. It is seldom that the malady can be regarded as of idiopathic origin, the outbreak being generally indicative of constitutional disorder and disturbance of the physiological equilibrium of the blood-current; often, after the successful suppression of the hæmorrhage, should the systemic cause be overlooked, the

periodical return of the flux frequently occurs. While Morell Mackenzie attributes the frequency of nasal hæmorrhage in growing youths to plethora, Germain Sée, on the contrary, charges its inroads to anæmia, and censures parents and physicians for not recognising the condition as indicative of general debility. Possibly first attacks may be due to a hyperæmic condition of the blood, their frequent repetition, by draining the system of its normal amount of fibrin and red corpuscles, may induce an anæmic change; in this case, the passive hæmorrhage from the delicate lining of the nostrils shows an absence of the buffy coat, imperfect coagulation, and a soft clot, with often a diseased and impaired texture of the capillary vessels in the Schneiderian membrane. When, however, the nasal discharge is of an active character, the blood is surcharged with red globules and fibrin in increased proportion.

As to the ætiology and pathology of epistaxis, the result of my observation and experience leads me to attribute its causation, in the first instance, to functional and often to structural disease of the liver, the hæmorrhagic diathesis being a dyscrasia—a secondary affection due to chronic hepatic derangement, and this theory should not appear unreasonable if we take into account the rôle of the liver in the constitution and distribution of the blood, its metabolic activity, its power of transforming hæmoglobin into bile pigment, its capacity for storing up glucose under the form of glycogen to pour into the blood when it is needed, and its double supply of blood through the hepatic artery and portal vein; the proportion of the vital fluid constantly flowing through the liver is fully one-fourth of the whole; when also we remember that, as the result of heterogenesis, we owe the existence of lithic acid and the glycosuric dyscrasias, it is not unreasonable to attribute to the same organ the formation of the deteriorated, depraved, and hyperinotic blood of the anæmic subject of epistaxis.

In support of my theory that hæmorrhagic discharges from the upper end of the alimentary canal, the lips, and the nose, are as evidently due to hepatic congestion as those from the rectum, I am enabled to quote the authority of an eminent pathologist—the late Dr. Moxon. In one of his lectures on Analytical Pathology, delivered in Guy's Hospital,^a he states that “it is, indeed, very surprising to find a very free, and even a fatal, hæmorrhage from the stomach, while the mucous membrane, from which the blood (as in epistaxis) must have come, is entire, yet, no doubt, this

^a Medical Times and Gazette, July 11, 1870. Page 58.

sometimes occurs. I have met with a case where cirrhosis of the liver led to total obstruction of the portal vein by *ante-mortem* coagulation in it, and in consequence of this obstruction a varicose œsophageal vein ruptured close to the cardiac origin of the stomach; a small hole was found leading into the vein channels; the patient had bled to death from this. The occurrence was equivalent to the rupture of *œsophageal piles*, and it is an interesting link connecting the common anal hæmorrhoids that arise from hepatic obstruction with the dilated venules on the cheeks and in the mouth, that we recognise as signs of obstructed hepatic circulation. *These venules are indeed no other than facial hæmorrhoids.*

Michael Foster writes:^a—“Since in the heart and great blood-vessels the blood is simply *in transitu*, without undergoing any great changes, it follows that the changes which take place in passing through the liver and skeletal muscles far exceed those which take place in the rest of the body.” And Aitken:^b—“Numerous instances of the hæmorrhagic diathesis have pointed to a definite organ as its source—viz., either a morbid condition of the spleen or liver; and in case of leukæmia, usually toward the close of life, a genuine hæmorrhagic diathesis is developed.” Immermann, too, treating of the general diseases of nutrition, says:^c “If a disorder of nutrition, looked at broadly, depends on a disturbance of the mutual relations between the blood and the tissues, it necessarily follows that it may originate either in an abnormal state of the blood or the tissues. Hence the pathogeny of the general disorders of nutrition suggests the possibility of their arising in different ways, and regards any one-sided theory—*e.g.*, that they are a blood disease, as, *à priori*, unjustifiable. For, since the blood, besides supplying the tissues with pabulum, also receives from them the products of cellular metamorphosis, it is always possible that owing to a morbid state of all, or a majority of the tissues a secondary heterotomy or dyscrasy of the blood may be induced, as in diabetes mellitus. The anæmic condition may possibly depend on a state of the tissue elements in which the desire for pabulum is relatively good, when accompanied with an inadequate energy of sanguification; the hyperæmic, on a weak acquisitive power in the tissues, while the power of renewal of the constituents of the blood is unimpaired.”

^a “Physiology.” Page 35.

^b Aitken. Vol. II., page 78.

^c Von Ziemssen. Vol. XVI., pages 257-9.

My contention, then, is that the starting-point in the constitutional disorder which takes the form of anæmia or hyperæmia, and of which epistaxis is a frequent result, is as clearly due to hepatic disorder as diabetes mellitus itself—viz, to an abnormal condition of the tissue elements or cells in the liver, secondarily affecting the blood and general constitution. With this theory of causation, treatment would naturally proceed on the lines of improving the constituents of the blood, and of restoring the health of the liver, whether functionally or organically defective. In accordance with my recorded experience,^a the first indication would be most readily met by the free administration of chlorate of potassium alone, or in combination with iron; the second, by counter-irritation over the region of the liver, a large blister being practically the most convenient form; further, as chlorate of potassium is possessed of remarkable hæmostatic properties, I am satisfied that it is not solely through its immediate action on the molecular elements of the blood, but also by its direct operation on the disordered condition of the liver, that it controls and limits the congestive and other lesions of this important organ. That potassium chlorate has the power of yielding some life-giving element to the blood in cachectic conditions, and that its presence in the blood acts as a powerful stimulant to cell-growth, cannot be questioned. It is at the same time difficult to explain its *modus operandi*, whether by the separate action of its important elements, or, in a topical manner, *per se*.

Bence Jones says that—"By dialysis all crystallised bodies act as directly on the textures as on the blood; they act according to their chemical power when they enter the textures, and according to the chemical and physical properties of which the textures are composed." Besides, according to Sir Charles Cameron, "drugs produce powerful catalytic effects without undergoing themselves any chemical changes." But, whether through the agency of its separate elements by dialysis, or catalytic action, the clinical facts remain, that the administration of potassium chlorate produces in the human subject the identical result claimed for oxygen by Beddoes, Thornton, Birch, and Hill, that it energises to a considerable extent the nutritive functions, increases the appetite, slightly elevates the temperature, stimulates the cardiac movement, and augments the

^a British Medical Journal, October 30, 1880. N.B.—I intentionally pass over topical treatment during an attack, as there cannot be any doubt of its necessity.

body weight, increases the number and stimulates the organic activity of the red globules. The combination of topical and internal remedies having proved so satisfactory in the suppression of hæmorrhage from the bowels dependent on bleeding piles, and success having often attended their separate action, through their curative influence on the congested liver, I became convinced that equally satisfactory results would follow in cases of nasal hæmorrhage by the adoption of similar measures. I had for a long time recognised the fact, that in the great majority of persons suffering from congestions, cirrheses or other hepatic diseases, if free from anal discharges, they were subject to desultory bleeding from the nose, and in most instances from the right nostril. Extensive clinical experience tallied completely with my theory of causation, and confirmed its correctness, and has enabled me to claim for counter-irritation over the liver the merit of a speedy and effectual remedy for this troublesome disorder. Hæmorrhage from the right nostril has always been regarded by me as a sign of hepatic disease, and even Galen^a had long since referred to this peculiarity as a guide in treatment of epistaxis. "Cupping glasses," he says, "applied to the hypochondrium arrest nasal hæmorrhage. When the blood flows from the right nostril they should be applied over the liver; from the left, then over the spleen; when from both sides, then the cupping glasses should be applied over both sides."

In a paper^b read at the Cork meeting of the British Medical Association on the subject of the hæmorrhagic diathesis, I related the particulars of a case of epistaxis hæmophilia, in a youth of eighteen, engaged in a mill near Belfast, who suffered so much from a continuous dropping of blood on the flax he was manipulating, that he feared he would have to retire from the business. His family history is remarkable, his father having been subject to many severe attacks of epistaxis—sometimes persisting, despite of treatment, for a month at a time; another member of the family suffered similarly from the extraction of a tooth, a wound by shaving giving rise to most troublesome bleeding. I prescribed an ounce of chlorate of potassium in a pint of water, with the addition of one drachm of muriated tincture of iron—a fluid ounce for a dose—thrice daily. Before the mixture was finished the case was complete and permanent; this dates from June, 1874.

^a Gazette Hebdomadaire. 1881. P. 145 du feuillet.

^b British Medical Journal, 1880, October 30.

In the *Lancet*, October 30, 1886, I published the following notes of four cases:—

CASE I.—On May 13, 1885, I was sent for, to visit J. B., aged eighteen, a counter hand in a spirit store, subject to free bleeding from the right nostril for many weeks, to severe headache, and constipated bowels. No history of piles. On examination I found the liver tender on pressure and somewhat enlarged. I then applied the liquor epispasticus freely over the hepatic region, telling the young man that after five hours the bleeding would permanently cease, and ordered some cholagogue medicine. As I predicted, the hæmorrhage ceased, without any return up to the present date.

CASE II.—On same day a young man, apprenticed to a chemist, came, accompanied by his father, to me. He had suffered very much from indigestion and vertigo, and hæmorrhage from right nostril for many days. I had formerly treated his father for congestion of the liver, due to excessive drinking. On examining the patient I discovered an enlarged liver with congested cutaneous veins traversing the right hypochondriac region. I applied the fluid blister with the usual result—an immediate cessation of the epistaxis. The young man has since emigrated, but up to the day of his departure, six months after, there had been no reappearance of the blood.

CASE III.—On May 25th, 1885, J. S., an indoor servant, sought my advice. He had been suffering for the previous six weeks from profuse epistaxis from the left nostril. At first it appeared at regular intervals, but latterly it observed no limit, coming on six or seven times every day. He had a large and torpid liver, and many of the subjective signs of the disease—disturbed sleep, headache, irritable temper, borborygmi, hardened stools, depressed spirits, unwillingness to rise in the morning, and drowsiness in the day. I then applied the counter-irritant over the seat of the disease; the epistaxis yielded at once, as well as the other objective and subjective symptoms. The cure has been for so far a permanent one.

CASE IV.—While paying my morning visit to a straw lodge—an improvised barrack for police during the riots of 1876—accompanied by one of the officers, I found one of the men in bed with a handkerchief at his nose, saturated with blood, which had been flowing for the greater part of the previous night. On satisfying myself of the causal factor in the attack, I painted him over the liver with the epispastic fluid, prescribing no other remedy but rest in bed. On our revisiting the man next day, he informed us that from the moment that the blister began to pain him the hæmorrhage declined, and shortly after ceased altogether.

CASE V.—*Vicarious Bleeding from the Nose and Under-lip.*—Mrs. M., aged thirty-eight years, the wife of a sergeant in the Royal Irish Constabulary, mother of six children, called on me early in March, 1885. Before marriage she had suffered from hæmorrhoids, and during her first and subsequent pregnancies from hepatic congestion and occasional hæmorrhage from the bowels, which often gave me some anxiety on her account. On this occasion she presented every sign of anæmia and debility—blanched cheeks and lips, sunken features, compressible and feeble pulse, undue palpitation of the heart on the slightest exertion, continuous headache, and frequent vertigo. She attributed her exhaustion to profuse bleeding from the left under-lip, occurring at every meal and generally lasting for ten minutes each time. On examination I discovered a slight abrasion at the junction of the epidermis with the lining membrane of the left lip, about half the size of a threepenny coin, from which the blood flowed freely. Mrs. M. had removed from my neighbourhood two years previously; and as the hæmorrhoidal flux again became troublesome, by the advice of an experienced physician she entered the Royal Hospital, Belfast, in February, 1883, where the offending growths were soon deligated by one of the attending surgeons of that institution.

After returning home in April her relief was of short duration, irritation about the anus occurring from time to time, and occasionally a slight discharge of blood from the nostrils. But in the June following her left under-lip became painful, and blood began to ooze from it, once or twice in the week; the intervals then became shorter, the drain occurring every day, then at every meal, or when by accident the lip was hurt.

Having from previous experience acquired a thorough knowledge of the patient's constitution and requirements, I did not hesitate but immediately ordered the application of a blister, 8 inches by 4, for eight hours over the region of the liver, to be followed by cotton-wool dressing. On my visit next day I was informed that from the moment free vesication was established all labial hæmorrhage had ceased. I then prescribed the use of chlorate of potassium and tincture of iron in liberal doses; there was a speedy return of health, her colour and bodily strength soon reappeared, the headache and vertigo troubled her no more. She occasionally complained of pain at the delicate lip; and with one exception since that date, when a slight bleeding appeared, which, without consulting me, she speedily arrested by a blister over the liver, she has not had any recurrence of her trouble.

I shall conclude with two cases of recent occurrence:—

CASE VI.—Miss N., a lady of middle age, residing in the country, sent for me in March, 1891, for a severe attack of epistaxis, recurring at

intervals and causing anxiety on account of her distance from medical advice. Recognising in her case an enlarged and torpid liver, greatly due to want of exercise, and to good living, I applied the fluid blister over the affected organ, and was informed next day that all hæmorrhage had ceased. I recommended some active purgation, and more moderation in food, and there has not been any return of the malady.

CASE VII.—Miss L. D., aged twenty-six, a worker in a wareroom, necessitating a sitting posture and head bent over her work—a branch of the linen trade—called on me on 4th April, 1891, complaining of frequent attacks of nasal hæmorrhage, sometimes lasting for a week and requiring her abstention from work for that time; the disease had continued for three years, and she had consulted many physicians and specialists, having among other remedies been using Blaud's pills for many months without relief. I applied the blister as usual, recommending the hæmostatic of iron and potassium chlorate. She had an immediate recovery, and has been able to attend her place of business with regularity, except that on 9th December, being prostrated with influenza for a few days, her nose bled for about three minutes, requiring no special treatment.

It is, probably, worthy of note that almost coincident with my researches on the nature and treatment of hæmorrhagic diseases a learned Academician and eminent surgeon, M. Verneuil, of La Pitié, Paris, was perseveringly working out a similar problem. He arrived with me at the same conclusion—viz., that in cases of nasal and anal hæmorrhage the liver was primarily in fault, and that our curative efforts should be directed in the first place to it. My cases of anal and nasal hæmorrhage, as published in the *British Medical Journal*, occurred in 1867 and 1874; and M. Verneuil's Memoirs in 1870 and 1875. Further, the first five cases of epistaxis which I have just read, and which appeared in the *Lancet* in Oct., 1886, were followed by a paper communicated to the Académie de Médecine, Paris, six months after—April, 1887—M. Verneuil giving an account of three remarkable cases of epistaxis cured like mine by counter-irritants, or, as he called it, revulsives over the liver. M. Verneuil politely sent me a copy, from which, in an abbreviated form, I give the three cases:—

Case 1.—A man, aged fifty-nine, of robust frame, given to alcoholic excess, resulting in a marked diminution of the size of the liver, subject to intermittent attacks of epistaxis, which plugging the nostrils, sulphate of quinine, ergotin, and digitalis failed to arrest. Recognising a coming cirrhosis of the liver, and

a causal relation between this morbid condition and the hæmorrhage, M. Verneuil directed the application of a blister to the right hypochondrium, putting an end to further medication. The hæmorrhage was definitely arrested by this means. Case 2.—Traumatic epistaxis—A groom, aged forty-five years, of sober habits, but much subject since his fifth year to attacks of epistaxis, received an injury from the foot of a horse upon his face, followed immediately by profuse and continuous bleeding, which resisted plugging of the nasal fossa and all internal medication. On examination, all the viscera except the liver proved to be sound; the latter was notably diminished in volume. The suspension of all internal remedies and the application of a blister over the right hypochondrium arrested the epistaxis at once. Case 3.—Intermittent epistaxis in a patient formerly the subject of nephritis, at present suffering from an affection of the heart and congested liver; failure of plugging, ergotin and the water of Lechelle, and perchloride of iron; immediate cure by the simultaneous employment of sulphate of quinine and a large blister over the region of the liver.

M. Verneuil concludes from these facts—1st. Latent and even non-malignant affections of the liver may provoke and be the occasion of troublesome epistaxis; 2nd. Relief procured by the aid of a large blister over the right hypochondrium, which appears to be the best means of curing hæmorrhages of this nature. M. Verneuil concluded his paper in the following terms:—"The maladies of the liver constitute a serious complication for operations, and when one recognises clearly their existence in a patient the wisest course is at once to return his bistoury to his pocket."

While admitting the importance of the clinical facts the Academicians preferred not to commit themselves to any therapeutic theory; they did not, as a scientific body, admit the principle of revulsives, M. Dujardin-Beaumetz declaring that was too extensive a subject to enter on—in fact, since the time when M. Malgaigne some fifty years ago commenced a crusade against revulsives, and particularly blisters, in the Academie de Médecine this subject has continued to prove a bone of contention. M. Colin could not understand why blisters were preferably applied over the liver, as there was no vascular connection between the skin and that organ; he considered that the heart was at fault, and that epistaxis was provoked by exaggeration of the vascular system that ruptured the delicate vessels of the pituitary membrane in the nose.

M. Verneuil, in reply, said it was not necessary to have any vascular connection between the organ and the part to which blisters were applied, and that it was the nervous system through the existence of reflexogene zones that determined the point of application. Finally, he said that it was not his desire to formulate any therapeutic ætiology, but simply to state interesting facts.

The ideas generally entertained at present in this country as to the ætiology of bleeding piles afford a typical example of an error to which modern physicians are occasionally liable—viz., that of mistaking secondary and accidental symptoms for the primary disease, and of the failure to recognise the connection that exists between these symptoms and certain morbid processes in important organs. Proceeding on these lines many physicians, not recognising a disordered liver as the *fons et origo* of the anal hæmorrhage, and not directing their energies to its improvement, incontinently relegate their patient to the operating surgeon, who, without hesitation or remorse, proceeds to deligate and destroy by his instruments of precision the safety valve provided by nature for the relief of the suffering organ. Sometimes, however, as in the instance recorded in Case V., the *vis medicatrix* changes the venue from the south to the north pole, and thus endeavours to baulk the surgeon's beneficent intentions by establishing a counter-current from the upper end of the alimentary canal. Happily for the patient it is not deemed necessary to repeat the same heroic remedy when nose or lip performs the vicarious duty.

I have always regarded the hæmorrhoidal flux as well as hæmorrhage from the nose as the outcome of the hæmorrhagic diathesis, itself the direct product of the hepatic cells in a state of hyperactivity, and, as a consequence, in endeavouring to restrain these inordinate discharges I have prescribed those remedies whose powers I have tested in controlling the undue activity of all the conglomerate glands, the liver included, my chief reliance being upon chlorate of potassium. When the case was urgent I have also invoked the aid of vesication, which has never failed me by its counter-irritant and derivative action in permanently suppressing either form of hæmorrhage. My experience dates back to 1867, and my first published case, which I read at the Cork meeting of the British Medical Association, appeared in the *Journal* of October 30th, 1880, as follows:—

CASE I.—J. C., a member of the Royal Irish Constabulary, after returning from duty at night from the Music Hall, found one of his

boots full of blood, which he traced to the rectum. I saw him next day (December 19, 1867), and directed his removal to the Royal Hospital. I had not on examination discovered any sign of external hæmorrhoids. He remained in hospital till the 14th February following without any benefit, and then returned to barracks. I then prescribed rest in bed and chlorate of potassium in the proportion of one ounce of the salt to a pint of water, one fluid ounce three times a day. After the first day he began to improve, and at the end of the third day every trace of the disease had disappeared.

CASE II.—Mrs. B., mother of three children, sent for me in April, 1875. When I arrived she was bleeding profusely from internal piles; had been ill for some days, and the drain had weakened her to an extreme degree. After prescribing absolute rest, I ordered a large blister to be immediately applied over the region of the liver, and my favourite hæmostatic—solution of chlorate of potassium and tincture of iron. This was done, and improvement followed at once. Next day she was free from all hæmorrhage. She afterwards, on the death of her husband, became a trained nurse in the Royal Hospital, and was never known to complain in a like manner.

CASE III.—Mrs. M.D., aged thirty-six years, mother of six children, sent for me on March 8, 1886. I found her in bed, pallid and exhausted from a profuse discharge of blood from the rectum which had continued for several days. The blood accompanied every evacuation, sometimes to the amount of three or four ounces. On examination I found a fringe of external piles surrounding the anus, and inside the sphincter a number of knotty tubercles, from one of which arterial blood flowed freely. In this, as in the former case, I immediately applied a blister over the hepatic region, and ordered, as an adjuvant, a mixture of tincture of perchloride of iron and chlorate of potassium in solution. The relief was immediate, and the patient soon recovered her natural colour and strength. At the end of a fortnight, however, I was again sent for, as the bleeding had returned as freely as ever. The relapse was due to the patient having undergone great fatigue the previous day while assisting her husband in business. As her friends had now become anxious I requested Dr. Walton Browne to see her with me. He agreed with me in continuing the hæmostatic mixture, having, in addition, a sedative enema at intervals. These remedies only gave her partial relief, and, at the request of the patient, I reapplied the blister. The remedy was again successful; all bleeding ceased, and has not reappeared up to the present date.

In the leading article of the *Bulletin Général de Thérapeutique*, Paris, of July 30, 1888, M. le Docteur Petit^a writes as follows:—

^a Du Traitement du Hæmorrhages par le Revulsion sur la region hépatique.

“The *rôle* of diseases of the liver in the pathogeny of hæmorrhages is admitted by almost all the world since the memoir of Monneret in 1853 upon spontaneous hæmorrhages, and those of M. Verneuil in 1870 and 1875 upon traumatic hæmorrhages. Starting from these data it occurred to M. Verneuil that it would be judicious in certain intractable hæmorrhages to have recourse to revulsive measures in the hepatic region; that is to say, to treat the lesions of the liver as the exciting cause of the hæmorrhages. The most common of these spontaneous hæmorrhages appeared to be the hæmorrhoidal flux and epistaxis, and it was against the first of these that M. Verneuil in 1874 attempted revulsion over the liver. Moreover, at his request, one of his house surgeons, M. Duret,^a in order to illustrate the *rôle* which affections of the liver played in the pathology of hæmorrhoids, demonstrated by several accurate dissections the anastomoses of the originating venules of the portal vein with the hæmorrhoidal veins. In the same year, 1885, M. Duret published in the *Progrès Médical* a clinique of M. Verneuil, giving three cases in which the relation between an affection of the liver and the hæmorrhoidal flux was abundantly evidenced.

Cases 1, 2, 3.—In a clinical lecture delivered in 1875^b at La Pitié, M. Verneuil detailed the history of a patient suffering from profound anæmia, caused by a hæmorrhoidal flux of twenty years' standing, and recurring each time he visited the closet. He paid particular attention to the state of the liver, which was considerably increased in size; the spleen, too, showed an equal enlargement. Without deciding whether or not the hypertrophy of the liver had been the exciting cause or the consequence of the hæmorrhoids, M. Verneuil clearly established the connection between this affection of the liver and the hæmorrhoids. The same relation existed between the other two patients referred to in the lecture. One of them presented an enormous hypertrophy of the liver and the spleen, and voluminous hæmorrhoids. Since coming under his care he had administered a number of cold douches over the region of the liver and spleen, and he could testify to the great diminution of both organs; as for the hæmorrhoids

^a Duret. Sur la disposition des veines du rectum et de l'anús et sur quelques anastomoses peu connues du système port. Le Progrès Médical. 1877. P. 304. Recherches sur la pathogenie des hémorrhoides. Arch. gén. de méd. 1886. 7^e Serie 1. V. P. 191.

^b Published by M. Duret in Le Progrès Médical. May 15. P. 261.

they had completely disappeared. The influence of revulsion by means of cold douches upon the affection of the liver and upon the hæmorrhoids was most remarkable in the second patient, enfeebled by numerous discharges of blood flowing from voluminous hæmorrhoids. He was in a state of profound anæmia, and showed an enormous liver. M. Verneuil, who had intended to operate upon him, determined first to reduce the hypertrophy of the liver. He advised hydrotherapy, which, after six months, proved thoroughly successful in lessening the size of the liver and in putting an end to the hæmorrhage. The salutary influence of revulsion in this case established clearly the relation between the affection of the liver and also the cure without any operation on the hæmorrhoids. Since that time M. Verneuil has completely abandoned the use of bloody operations in the treatment of hæmorrhoids. He has exclusively adopted dilatation by force (rupture of the sphincter) with the aid of interstitial cauterisation by the thermo-cautery when the hæmorrhoids are very numerous or very vascular. The application of compresses saturated with phenic water and some days of repose suffice to complete the cure.

M. Petit concludes thus:—"The subjects of chronic hepatic affections are liable to many spontaneous hæmorrhages, medical or surgical. A large number of facts having demonstrated that there exists a direct relation between spontaneous hæmorrhages and chronic affections of the liver, it seems to be a logical conclusion to treat the hæmorrhage by revulsion over the region of the liver, which usually proves most successful. When, then, we are called to a patient attacked by spontaneous hæmorrhage the indication is to examine the state of the liver, and if this organ prove to be in an abnormal condition then to apply a blister to the region occupied by it."

Such is a slight sketch of the teaching of the eminent surgeon to La Pitié and other Gallican authorities. That it has not as yet been accepted in England is undoubtedly true; and although there is not another organ of the body whose congestions and hypertrophies are more amenable to treatment, yet the minds of the leading medical authorities appear only anxious to excel in the invention of the most perfect instrument of mutilation, and to decide whether the clamp, the ligature, or the knife, or the actual cautery is best adapted for the destruction of the safety-valves provided by nature for the relief of an overburdened viscus at its lowermost outlet, the hæmorrhoidal veins.

If a recent discussion at the Medical Society of London^a may be accepted as voicing the opinion of the metropolitan profession, it would appear that the rôle of the liver in the causation of piles is ignored, and that the favourite remedy for a medical ailment is the mechanical treatment of aggressive surgery.

When one compares the bald and unsupported opinions of the speakers, with the exception of the author of the paper, who gave a qualified assent to the causal influence of the liver in this discussion supremely anxious to "*exonerate*" the liver from any part except occasional in the causation of piles, with the outspoken dictum of Astley Cooper delivered sixty years ago in old St. Thomas's, he would feel a difficulty in complimenting them on the progress of medical science in the end of the 19th century. In his lecture on Piles,^b after mentioning costiveness and diarrhoea as often a cause of this complaint, Sir Astley continues—"It very often arises from disease of the liver, and congestion of the veins in the intestinal canal. The difficulty of transmitting the blood through the vena portæ occasions a congestion in the hæmorrhoidal veins, and obstructed secretions in the intestinal canal lead to the same effect."

It may be asked, What is the *modus operandi* of the blister in these hæmorrhagic ailments? The blister in these cases acts—first, as a counter-irritant by causing an irritation of the surface and of the terminal branches of the cutaneous nerves, which, through the influence of the trophic nerves, affects the calibre of the arterioles, and thus controls the congestion and hypertrophy; but the vesicant acts also as a powerful depletive by abstracting from the circulation in the neighbourhood of the diseased organ a quantity of white blood, highly albuminous and coagulable on the application of moderate heat. Doubtless, wet-cupping in the hypochondriac region or free leeching from the anus would also rapidly react on the liver, and perhaps as readily relieve present congestion; but, irrespective of the greater inconvenience of such remedies, there is a potent objection to their use—viz., that they must abstract from the system, already too anæmic, a quantity of red globules and fibrin, confessedly present in insufficient proportion; while the blister is as powerfully depletive, leaving untouched the hæmoglobin, and not increasing the hyperinotic condition.

In conclusion, although professional men are often chargeable

^a Lauder Brunton. On the Causation and Treatment of Piles.

^b Lectures on Surgery. 4th edition. Page 420.

with marked reluctance in admitting the relation between cause and effect, between remedy and cure, yet from the uniform sequence of events that attends the revulsive method of treatment in epistaxis and the hæmorrhoidal flux, I think I may safely claim for it the title of a reliable remedy. In the words of Peter Latham:^a “The treatment of diseases is in fact a part of their pathology. What they can bear, the kind and strength of the remedy, and the changes which follow its application, are among the surest tests of their nature and tendency.”

ART. XXI.—*Some Modern Methods of Sewage Treatment.*^b By D. EDGAR FLINN, D.P.H., F.R.C.S.I., M.R.C.P.I.; Examiner in State Medicine, Royal Colleges of Physicians' and Surgeons' Conjoint Examining Board; Surgeon, St. Michael's Hospital, Kingstown; formerly Med. Officer of Health, E. Staffordshire.

Dr. Alfred Carpenter has truly said that—“It is the object of the sanitarian to bring about conditions which diminish the frequency of early death, which assist to remove bodily pain from the list of human grievances, and to pave the way for that time when every person born into the world will enjoy his birthright, without having it curtailed by the acts of other people.”

THE object I had in view in the drafting of this paper was to draw the attention of this Section to the benefits derivable from the most recent methods of sewage disposal. “The sewage problem,” as it has been aptly termed, has passed through many stages during the past twenty years or more, but it is only within the last few years that scientific knowledge has sufficiently advanced to bring this vexed question within the possibility of a final and successful solution. Sanitarians have devoted themselves assiduously to grapple with the difficulties that beset their way in the disposal of the sewage of cities and towns, and if they had not, to a great extent, surmounted these difficulties, the condition of the large centres of population would long ere this have become intolerable. Further, in regard to the progress that has been made in sanitary science, the reign of Queen Victoria will ever stand prominently forth as a most important epoch, as at the time of her accession the sanitary condition of the people was as bad as bad could be.

^a Author's preface, page 38.

^b Read before the Section of State Medicine of the Royal Academy of Medicine in Ireland, Friday, May 6th.

There has been a rapid advancement in the question of sewage treatment during the last ten years, and I opine that we have not yet come to a finality in this regard. The enforcement of the provisions of the Rivers Pollution Prevention Act of 1876, has become much more stringent, and effluents must attain a much higher standard of purity than heretofore. Previous to 1876 sewage matter and refuse from manufactories were discharged into rivers and streams, and the result was a wholesale pollution of the watercourses throughout the country. For some time after the Act mentioned above was passed, there was a great difficulty in the enforcement of its provisions, and it is only in very recent years that the benefits intended by its enactment have commenced to take effect. The new methods of sewage treatment have, no doubt, helped very much to this end, and the authorities have become much more alive to the necessity of preserving the waterways pure and wholesome. The alacrity with which sanitary reformers, as recently as twenty years ago, were anxious to get rid of refuse by pouring it into the nearest watercourse, completely blinded them to the fact that they were only temporarily relieving themselves of an evil that must, sooner or later, have its pernicious results elsewhere.

Three principal methods are recognised and are in use for the purification and disposal of sewage—viz., precipitation, filtration, and irrigation. The precipitation process is carried out by means of various reagents—the principal object in view being the purification of the sewage—lime, either alone or in conjunction with other chemicals, being most frequently used. The process of precipitation by lime has been pronounced, by the Rivers' Pollution Commissioners, "to be a conspicuous failure;" indeed, practically, the same may be said of the majority of the other methods employed in the precipitation of sewage, notably, the lime and sulphate of alumina process; the A. B. C. alum, blood and clay process; the lime and chloride of iron process, &c. The defined position of precipitation of sewage may be summed up in the words of Dr. Dupré, F.R.S., a well-known authority on sewage purification. He says: "As regards processes of precipitation I will merely remark that inasmuch as no proportion of chemicals which can practically be employed will do much more than clarify the sewage, the proportion of chemicals employed should be kept as low as is consistent with the object to be attained—namely, clarification; and that, more par-

ticularly, the use of large quantities of lime should be avoided." In the more modern process, known as "the ferozone and polarite process," which will be subsequently referred to, the introduction of the precipitating material ferozone is followed by filtration of the effluent through a filter containing polarite. The advantage of having a precipitant immediately followed by a filtering medium is obvious.

The filtration system of sewage purification is divided into simple filtration, and intermittent downward filtration. In the former process the sewage is merely strained or screened, but the effluent is not purified. In the latter process, that of downward filtration, the Rivers' Pollution Commissioners reported that no system was attended with better results than the filtration of sewage through a considerable depth of soil. According to the Report of the Commissioners this process of sewage purification "was essentially one of oxidation, the organic matter being converted into carbonic acid, water, and nitric acid; hence the necessity for the continual aëration of the filtering medium which was secured by intermittent downward filtration." The requisite filtering area required to carry out this process of purification, as estimated by the Commissioners, is one acre, drained to a depth of six feet for every 3,300 of the population.

The process of irrigation on sewage farms is the one attended with most beneficial results, as it not only secures a purified effluent, but, in most instances, becomes a source of profit, and utilises the value of the sewage for the benefit of the crops grown on the land; but to insure success the surface must be irrigated on the intermittent system to allow of sufficient aëration of the soil, and no doubt the best purifying results will be obtained by a combination of both methods—viz., irrigation and intermittent downward filtration. This system is in operation at Birmingham, Wolverhampton, Leamington, Reading, Doncaster, Croydon, Nottingham, Warwick, and other smaller towns.

The comparative merits of the systems of purification of sewage are given by the Rivers' Pollution Commissioners, as follows:—

AVERAGE RESULTS.			
	Percentage of Dissolved Organic Pollution removed		Percentage of Suspended Organic Impurity removed
	Organic Carbon	Organic Nitrogen	
Chemical processes	28·4	36·6	89·8
Intermittent downward filtration	72·8	87·6	100·
Irrigation	68·6	81·7	97·7

The systems that have been thus briefly referred to are, no doubt, familiar to many, but the comparatively new systems of sewage treatment that I am desirous of bringing before this Section of the Royal Academy of Medicine are yet not very generally known, and in view of the fact that large and costly works are about to be carried out for the sanitary well-being of the City of Dublin, a short reference to each may thus be opportune. By way of preface it is, perhaps, worth noting that in connection with the London Metropolitan sewage disposal problem a combination of lime and proto-sulphate of iron was recommended by Mr. Dibdin, F.C.S., F.I.C., in the proportion of 3·7 grains of lime, in solution, to 1 grain of proto-sulphate of iron per gallon of sewage matter. The Metropolitan Board submitted the initiative results of this process to four independent chemists of the highest standing—viz., Sir Frederick Abel, Dr. W. Odling, Dr. A. W. Williamson, and Dr. A. Dupré, who advised that the method of precipitation was a good one, but that it left a sufficiently unpleasant smell to prohibit the effluent water being discharged into the river during warm weather at all states of the tide; and they subsequently recommended, after careful observation of the experiments, that if the liquid, resulting from precipitation with lime and proto-sulphate of iron, was subsequently treated with manganate of soda and sulphuric acid, it would be deodorised and purified to such an extent as to render its discharge into the river Thames unobjectionable at all states of the tide—the resulting sludge being conveyed into deep sea by specially-designed steam barges. My object in making this reference is that in the proposed Main Drainage Scheme for Dublin a similar treatment of precipitation, and carriage to sea, of our metropolitan sewage will be carried out from the plans of Mr. Chatterton, C.E. I am not aware what the precipitant agent is likely to be, but the probability is that the London system may be followed in Dublin in its entirety, and, if such be the case, a final and successful solution to what has been the eye-sore of a century or more will be achieved.

THE INTERNATIONAL SYSTEM,

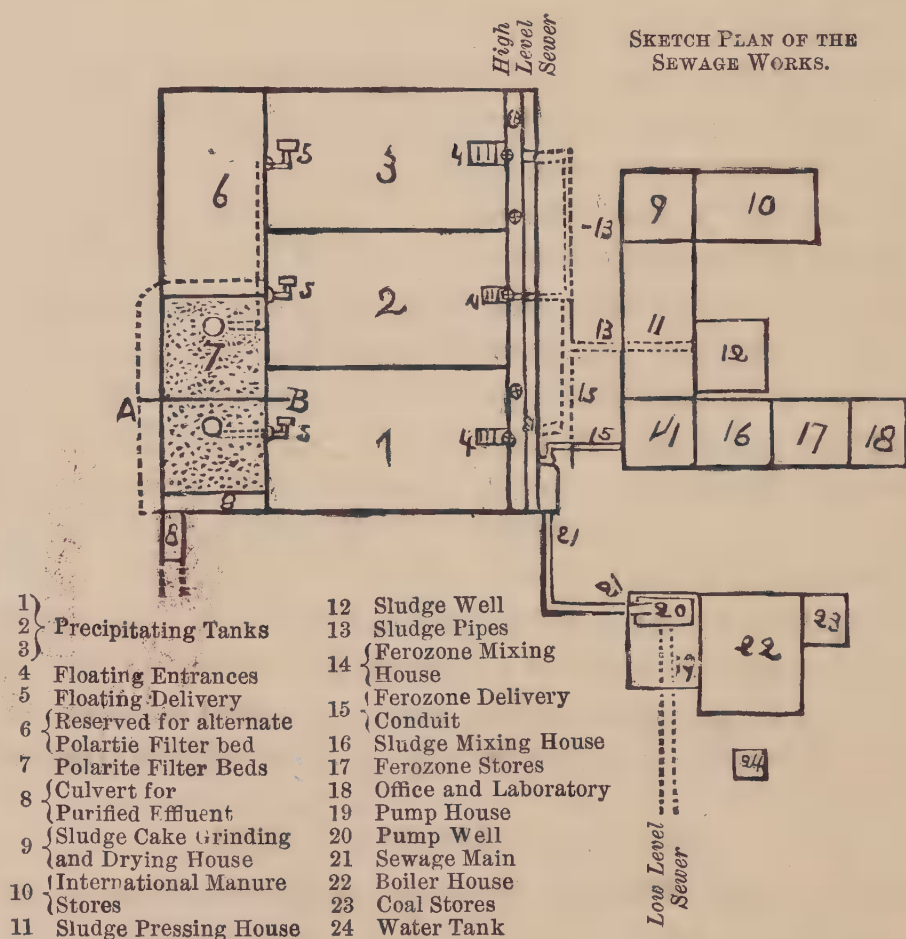
or the Ferozone Polarite System of Purification is of very recent date, and where it has been in operation appears to have been most satisfactory, and its results have been most encouraging. It is quite a new departure in sewage treatment, and

has excited a considerable deal of interest. It has been in use at Acton for the past four years, and the official reports credit it with being as perfect a system, if not the most perfect, of sewage purification as has yet been devised, the purified effluent being inodorous, non-putrescible, clear, and tasteless, which can be discharged into a river or water-course without any danger, or any tendency to undergo secondary decomposition. The process is carried on in two stages, viz. :—

1. By precipitating and deodorising the sewage in settling tanks by the aid of a magnetic precipitant and deodorant called ferozone.

2. By passing the partly purified sewage effluent from the settling tanks through polarite filter-beds, which arrest any solids remaining in suspension, and oxidise and render innocuous the putrescible matter held in solution.

Ferozone is the registered trade name of the material used in deodorising sewage, and precipitating the solids therefrom.



SKETCH PLAN OF THE ACTON SEWAGE WORKS, AND SECTION OF THE POLARITE FILTER BEDS.

It is rich in salts of iron, alumina, and magnesia, and also contains magnetic oxide of iron, in a very spongy and absorbent condition; by virtue of its soluble iron and magnesia salts it quickly causes subsidence of the suspended solids.

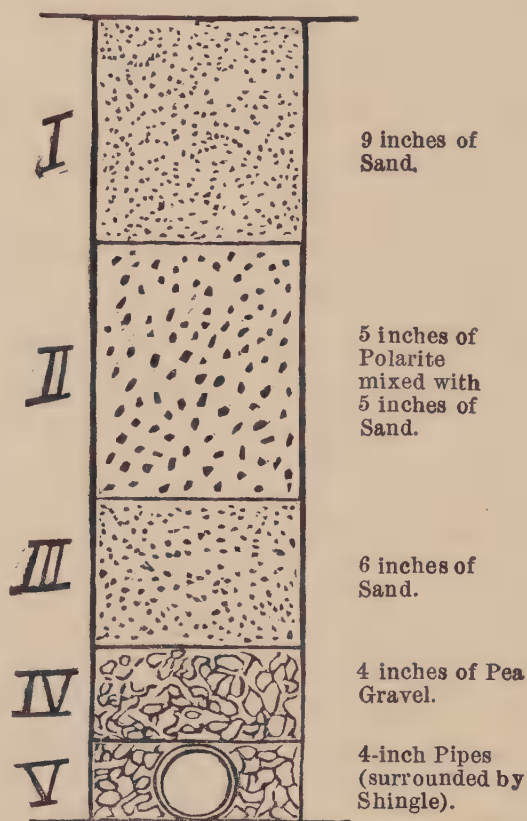
Polarite is the registered name of the material used for further filtering and purifying the ferozone sewage water from the putrescible matter dissolved therein; it is a black, porous, and magnetic oxide of iron, insoluble in water, and practically everlasting; it is very hard and absorbent; although consisting chiefly of iron, it does not rust, and its durability is unlimited; a cubic yard of polarite weighs about one ton, and is sufficient for rather more than six square yards of filter-bed; moreover, it is cheap enough to bring it into general use.

In carrying out the process of purification by this system, the sewage on reaching the outfall works is run through strainers to arrest floating solids, such as corks, rags, &c., and then flows quickly through a floating trough into a settling tank, the floor of which inclines towards the centre, so that a gutter may convey the sludge to the outlet valve. Before entering the tank the crude sewage receives a dose of ferozone which costs about one farthing for every thousand gallons of sewage treated. This can be added automatically by placing baskets of ferozone in the flowing sewage or by using Beloe's patent automatic sewage-mixing machine. In places where the sewage does not flow by gravitation, but has to be pumped, and steam-power is therefore available, the ferozone may be ground with water or sewage in a small edge-runner mill and added automatically to the crude sewage in a liquid state. The flow of sewage through the tanks should not be continuous if it can be avoided. Quiescent tanks are better for precipitation purposes, whatever kind of precipitant be used. When a tank is full its contents should be left standing for about two hours, so that the ferozone may have time to act thoroughly. As towns differ in the quality of their sewage, the needful period of quiescence may vary in different places. The ferozone will cause deodorisation and precipitation to take place in the sewage, and a considerable part of the albuminoids in solution will coagulate and be precipitated with the solids. The supernatant sewage-water thus clarified would then be drawn off and run through polarite filter-beds which produce a higher degree of purification.

The polarite filter-beds usually consist of six inches of broken

stone in which small agricultural drain-tiles are embedded, three inches of gravel, six inches of sand, twelve inches of polarite and sand mixed in equal proportions, and at the top a layer of nine inches of fine sand, making a total depth of three feet of filtering material. The depth of the layers is sometimes varied to meet special requirements. Polarite filters purify tank-effluents which have been treated with ferozone at the rate of 1,000 gallons per square yard in 24 hours. They give better results than are generally produced by land filtration, and at less cost and without nuisance. Land filters about $1\frac{1}{2}$ gallons per

SECTION ON LINE A.B. OF POLARITE FILTER BED.



VERTICAL SECTION OF "POLARITE" FILTER BED.

square yard in 24 hours, therefore one acre of polarite filter-bed will do more effective work than 666 acres of land. Hence the cost is much less than that of a sewage farm, and at the same time the results produced are more certain. The value of polarite for sanitary purposes can scarcely be over-estimated. By using it in small but powerfully active filter-beds it is unnecessary to buy large areas of land for sewage farms which, often become a public nuisance. Land is unable to take a continuous supply of sewage without great deterioration in its purifying

and aërating properties. It gets clogged and choked with albuminous and glutinous matters, and becomes sewage-sick and inefficient as a purifying agent. Sewage comes every day to be treated whether the farm is, or is not, in a condition to deal with it. In wet seasons, when the farm is sodden by rain and wants rest, an increased quantity of sewage comes to be purified.

The polarite filter-bed only requires a few hours' rest occasionally for aëration and for cleansing the surface sand, which can be done by an improved method at a nominal cost. The polarite never requires to be removed or replaced. Hence it is better to lay down several small beds rather than one or two large ones, so that they may rest a few hours alternately for aëration and cleansing.

The resulting ferozone sludge is comparatively inoffensive in odour, and in this regard has an advantage over the lime, and other processes; it has been proved to be richer in manurial value, and the sewage manure produced by the process is shown by analysis to contain nitrogen equal to from one to two per cent. of ammonia, besides phosphates; if placed under cover it dries very quickly, and can be ground into powder. At Acton it is sold as a fine powder at the large sum of 30s. per ton, whereas in districts where lime is the precipitant, the resulting sludge is carted away as a worthless material. Certainly this system of sewage treatment bids fair to solve a difficult problem, and if the resulting sludge can be made to return a fair revenue, I apprehend that urban and rural sanitary authorities will not be slow to recognise its merits. In Ireland it has not had a trial, but it is in operation at Hendon, Swinton, near Manchester, Balmoral, and sewage works are in process of construction at Guilford, Birkdale, and Sale.

As a filtering medium, polarite appears to have undoubted advantages as compared with sand-filtering material, and it is recommended for filter-beds in water-works, on the ground of economy as well as efficiency. It is well known that sand filter-beds have no chemical purifying power; they merely act as strainers, and retain putrescible matter, instead of oxidising and making them innocuous, and they leave them unchanged to contaminate the water. An instance of this occurred in the north of England, where an outbreak of typhoid fever was caused by the impurity of the filter-beds at the water-works. A Government inquiry traced the outbreak to fever germs in the filter-

beds, and the epidemic did not cease until the filter-beds were closed. Polarite not only enters into the purification of sewage effluents, but is now being used in the laying down of filter-beds in various parts of England, and report speaks highly of it as a filtering medium.

THE TREATMENT OF SEWAGE BY ELECTRICITY

is the most recent of all methods, and may be said to be very promising. Mr. Santo Crimp, referring to the Webster electrical process for sewage purification, says: "When it is considered that the application of electricity is almost daily extended to new objects, and that the science is as yet in its infancy, it must be admitted that the results achieved by the Webster process are of the most encouraging nature. The time may come when our towns will be lighted with electricity by night, whilst by day the dynamos will be employed in purifying the sewage; then the loading of the sewage with chemicals, with the consequent production of large masses of sludge, will no longer be necessary." Sir Henry Roscoe, M.P., F.R.S., has carefully investigated this process, and he mentions that "the quantity of sewage operated on in each experiment was about 20,000 gallons. The reduction of organic matter in solution is the crucial test of the value of a precipitating agent, for unless the organic matter is reduced the effluent will putrefy and rapidly become offensive. I have not observed in any of the unfiltered effluents from this process, which I have examined, any signs of putrefaction, but on the contrary a tendency to oxidise. The absence of sulphuretted hydrogen in samples of unfiltered effluents, which have been kept in stoppered bottles for three weeks, is also a fact of importance. By this process the soluble organic matter is reduced to a condition favourable to the further precipitation by natural agencies." Mr. Alfred Fletcher, F.C.S., F.I.C., Inspector under the Rivers Pollution Prevention Act, states:—"The result of my examination of this process has been to convince me of its efficiency in clarifying sewage, of removing smell, and in preventing putrefaction of the effluent. I am of opinion that such effluent as I saw at Crossness can be discharged into a river, or after passing through a thin layer of sand, even into a stream, without causing any nuisance."

Analyses of Samples of Sewage treated by Webster's Electrical Process.

PARTS PER 100,000.

Description of Sample	Oxygen consumed	Free Ammonia	Albuminoid Ammonia	Chlorides	Notes
(A) Mixture of 3 samples of raw sewage collected during time of treatment - - -	2.292	1.9	0.65	44.4	Stank badly on 3rd day
(B) Mixture of 3 samples of treated sewage flowing into tank before settling - - -	0.917	1.75	0.6	37.2	Faint smell on 5th day
(C) Same as sample A after settling 24 hours - - -	—	1.64	0.4	—	Stank badly on 3rd day
(D) Same as sample B after settling 24 hours - - -	—	1.84	0.12	—	Faint smell on 5th day
No. 7. Average sample of raw sewage under treatment - - -	2.5	1.8	0.65	41.2	Stank badly on 3rd day
No. 8. Treated sewage after 2 hours' settlement in tank - - -	0.583	1.08	0.07	35.8	Perfectly sweet after 10 days
No. 9. Same as No. 8 after filtration through 6 inches of sand - - -	0.536	1.00	0.06	35.6	ditto
No. 10. Treated sewage after 3½ hours' settlement in tank - - -	0.5	1.28	0.05	35.6	ditto
No. 11. Same as No. 10 after filtration through 6 inches of sand - - -	0.5	0.91	0.01	35.6	ditto

Probably low as the samples had been kept

The effluent produced by the electrical process, Mr. Webster states, contains about three grains per gallon of suspended matters, which consist almost entirely of oxide of iron, which is quite innocuous. Where this may be objectionable, from a sentimental point of view, it can be entirely removed by filtration through a few inches of sand.

The bacteria question is one which has probably still to be settled, but, in order to obtain some information as to the action of the iron compound produced by electro-chemical decomposition, some experiments were carried out, with the result that, after a given treatment, the whole of the bacteria were killed. In the case of experiments carried out in Paris, with ordinary treatment by means of iron electrodes, the results were as follows:—

	Raw Sewage	Effluent
Organisms per cubic centimetre,	5,000,000	600

In another experiment, in which the effluent was treated still further, all organisms were destroyed.

Unquestionably, this process of sewage treatment has many advantages, and may yet solve the vexed sewage problem.

Mr. Webster remarks further, "That it was while working with perchloride of iron, as a purifier of sewage that the importance of iron salts, in relation to organic matter, became apparent; and it was in connection with this chemical and free chlorine gas that the idea of electrolysis suggested itself."

THE "OXYGEN PROCESS."

A new process, which has had its birth in Ireland, and which promises to fully realise the expectation of its promoter, is the "Oxygen Process of Sewage Purification," devised by Mr. W. E. Adeney, F.I.C., and Mr. W. Kaye Parry, M.A., C.E. It has been submitted to an exhaustive investigation both in the laboratory and at some works at Monkstown, and the results have been successful. The process, moreover, has been examined in detail by the Chief Surveyor to the Board of Public Works, and has been selected by that body for the purification of the sewage of the Lunatic Asylum at Dundrum. To be brief, the results effected by this process are the complete separation of all matters in suspension in sewage, in a state suitable for air drying and utilisation as a manure, and an effluent of any degree of purity according to the circumstances of the locality to which it is applied may demand.

In this process the solid matters in the sewage are first separated from the soluble constituents by subsidence in a tank of special construction, no precipitating chemicals being employed. The destruction of the fermentable organic matters in solution in ordinary sewage is effected by taking advantage of the power which harmless micro-organisms, the germs of which are known to be widely distributed in the earth, air and water, have, when growing under the most favourable conditions, of rapidly decomposing such matters into carbonic acid, water, ammonia, and also nitric acid. Under proper conditions these products result directly from the decomposition of the soluble fermentable matters in sewage, without any intermediate putrefactive fermentation being set up. The formation of offensive bodies is in fact entirely avoided in this process.

The essential condition for the healthy and rapid action of the

organisms here referred to, is a plentiful supply of oxygen, free or combined. The necessary supply of oxygen is secured by a careful use of nitrate and manganate of sodium. One of the products of decomposition of the latter chemical is oxyhydrate of manganese; it is completely recovered by subsidence in a second tank, similar in construction to the one employed for the separation of the solid matters of the sewage. The recovered oxyhydrate of manganese may be dried and re-converted into manganate of sodium, and so may be used over and over again. It may also be employed for mixing with the solid matters of the sewage separated in the first tank to prevent putrefactive fermentation being set up in them during the process of air-drying them.

Another system,

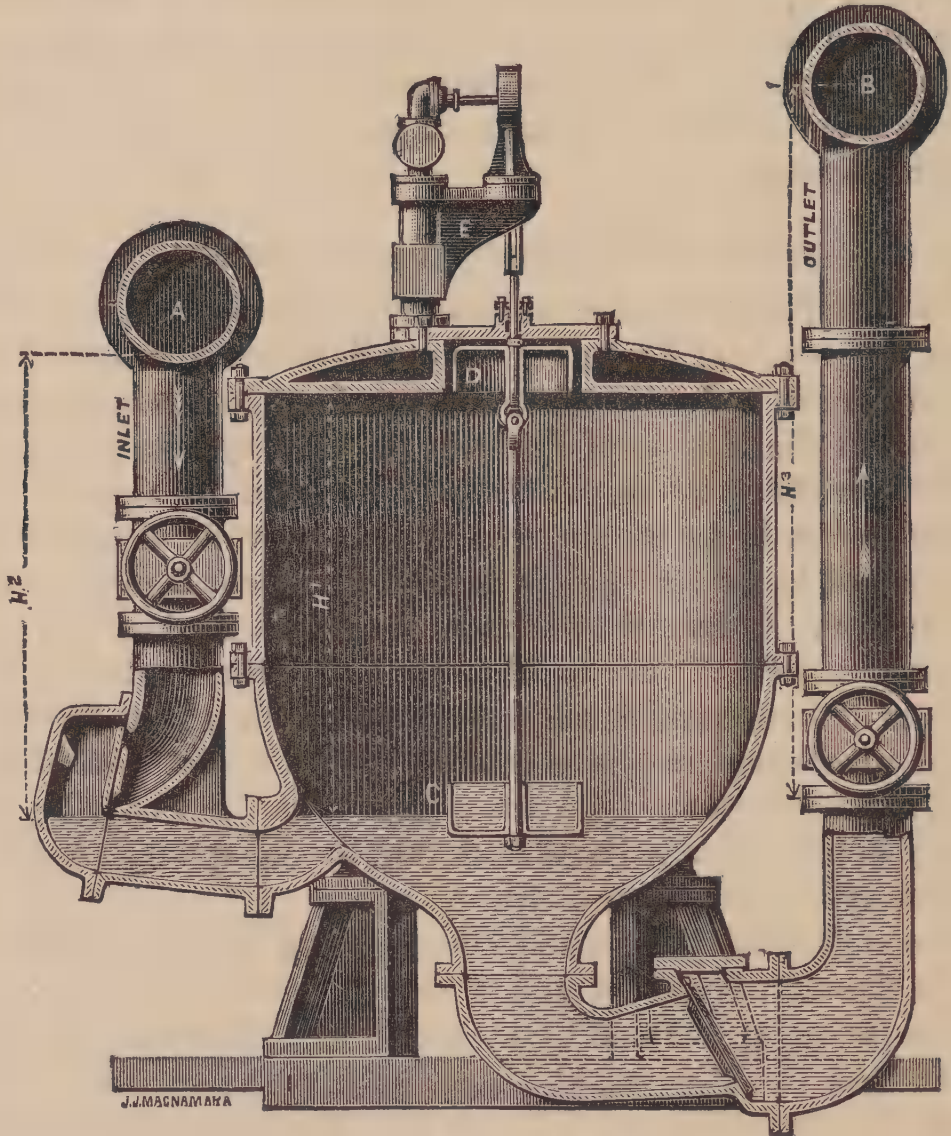
THE SHONE HYDRO-PNEUMATIC SYSTEM

is also of comparatively recent date, and is in operation at Eastbourne, Shirley, and Freemantle, near Southampton, Lowestoft, Stoke-on-Trent, and some other thirty or forty towns in England, as well as at the Houses of Parliament. The system appears to work admirably, and is particularly adapted to districts and towns of a low-lying nature, and where the volume of sewage is insufficient to cause what is termed a self-cleansing velocity in the sewers. Correctly speaking, the Shone System might be better described as a successful method of getting rid of sewage by means of automatic sewage ejectors, and a writer described it some time since in the columns of *The Health Record* as a system so elastic in its application that it can not only be successfully applied to a solitary building, but is equally adaptable to towns, cities, and rural districts.

In the subjoined illustration, the working of the Automatic Sewage Ejectors is shown, and is carried out as follows:—

The sewage gravitates from the sewers through the Inlet Pipe A into the Ejector, and gradually rises therein, until it reaches the underside of the bell D. The air at atmospheric pressure inside the bell is then enclosed, and the sewage continuing to rise outside and above the rim of the bell compresses the enclosed air sufficiently to lift the bell, spindle, &c., which opens the Compressed Air Admission Valve E. The compressed air thus automatically admitted into the Ejector presses on the surface of the sewage, driving the whole of the contents before it through the bell-mouthed opening at the bottom, and through

the Outlet Pipe B into the iron sewage rising main or high level gravitating sewer, as the case may be. The sewage can only escape from the Ejector by the outlet pipe, as the instant the air pressure is admitted on to the surface of the fluid the valve on the Inlet Pipe A falls on its seat and prevents the fluid escaping in that direction. The fluid passes out of the Ejector until its level therein reaches the cup C, and still continuing to lower, leaves the cup full until the weight of the liquid in the



AUTOMATIC SEWAGE EJECTOR.

portion of the cup thus exposed and unsupported by the surrounding water is sufficient to pull down the bell and spindle, thereby reversing the Compressed Air Admission Valve, which first cuts off the supply of compressed air to the Ejector, and then allows the air within the Ejector to exhaust down to atmospheric pressure. The outlet valve then falls on its seat

retaining the liquid in the sewage rising main; the sewage then flows into the Ejector through the inlet once more, driving the free air before it through the air valve, as the sewage rises, and so the action goes on as long as there is sewage to flow.

The valuable feature connected with the system consists in this—that by its aid the “separate system” of drainage can be carried out in the most perfect and sanitary manner possible, whether the district to be drained be flat, low-lying, tide-locked, or otherwise. All the chief sanitary engineers of the present day recommend the adoption of the separate system in preference to the combined system. But towns drained on the separate system now are few and far between, the reason being that the engineers who have designed the works could never get the hydraulic conditions necessary to cause the sewage to flow freely to what are called the outfalls; because it is well known that small volumes of sewage require to be turned into small sewers, having inclinations suitable to their sizes; and in flat districts the necessary inclinations can never be obtained.

In those districts hitherto drained by gravitation *per se*, the practice has been to construct big sewers at such gradients or inclinations as the configuration of the country or town would admit of. In dry weather, when only the sewage proper is discharged into such sewers, the volume is insufficient to cause what are called a self-cleansing velocity in the sewers, which then become sewers of deposit, and the large spaces within them not occupied by the sewage are more or less filled with foul air mixed with sewage gases, and these are permitted to escape haphazard into the streets under which they are laid, and into the houses with which they are connected.

In this manner unsanitary, and not sanitary, drainage works have been, and still are being, executed all over the world. But by the Shone System the most perfect hydraulic gradients can be secured throughout the whole area to be drained. Besides securing self-cleansing sewers by the Shone System, these sewers can be effectually ventilated by the action of the ejectors in a most simple but thoroughly scientific and practical manner.

It will be noted that the modern or later attempts to solve the sewage difficulty possess many features of practical interest, and I claim the indulgence of this Section if I have unduly trespassed on its time.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Report of the Hyderabad Chloroform Commission. With a Preface by SIR ASMAN JAH, K.C.I.E., Prime Minister of Hyderabad. Bombay: Printed at the *Times of India* Steam Press. 1891.

(Continued from page 321.)

THE conclusions of the Committee did not pass unchallenged. The Glasgow Chloroform Committee, consisting of Drs. John G. M'Kendrick, Joseph Coats, and David Newman, wrote as follows to the *Lancet*:—

“The Hyderabad Report, which appeared in the *Lancet* of January 18th, naturally attracted our attention and called for remark, especially as it seemed to traverse certain of our conclusions. On carefully reading the Report, it appeared to us that, so far as the facts are concerned, it generally confirmed our own observations as to the action of chloroform both on respiration and on the heart. Some of the inferences, however, are opposed to ours; but they are also opposed, as we believe, to the facts stated in the Report itself. We therefore propose to criticise the Report, and we would have done so immediately after its publication but for a request communicated to us that we should wait for the publication of the tracings on which the Report is largely based. *We at once agree to postpone our remarks*, and only make this communication lest our silence should be misinterpreted.”

In a footnote appended to this letter we read—“In spite of this statement the Glasgow Committee published their remarks one week before ‘the publication of the tracings on which the Report is largely based.’”

It is unfortunate that the Report gave rise to a discussion in which a criticism of the experiments, how they were conducted and their value, degenerated into something like the bitterness of a theological controversy. The opponents of chloroform urged its rejection more forcibly than logically, and the issue to be tried seemed forgotten in the heat begotten of the dispute. Some eminent surgeons did contribute valuable material toward the much-

disputed worth of chloroform, notably Dr. Macewen, whose Address as President of the Medico-Chirurgical Society of Glasgow, on the 31st of October, 1890, is one of the most valuable contributions to the study of anæsthetics we possess. Viewing the question from the clinical standpoint, this able surgeon says:—

“Let the student study the physiological action of chloroform, learn that it is an agent which places the functions of the cerebro-spinal axis in abeyance, but does so *seriatim*, in a definite order, and which may, if pushed far enough, suspend them all. Let him be fully alive to its dangers, and how to counteract them, and let him recognise the safety zone of chloroform narcosis, and he will find it an anæsthetic powerful, it is true, but controllable, and though not infallible, yet a most valuable and useful servant. Meanwhile, chloroform is one of the safest and best anæsthetics, though it requires for its proper administration knowledge, skill, and assiduous attention.”

The restoration to medical favour of chloroform was, at first, fraught with much danger to the public, and was injurious to the therapeutic reputation of the drug. Numbers of anæsthetists who formerly gave ether now disregarded it for its rival, and commenced chloroformisation without that knowledge and skill on which Dr. Macewen so properly lays stress, and very soon “Death under Chloroform” became a familiar heading in the London weekly medical journals.

As might be expected, an outcry against the use of the anæsthetic was raised by those opponents whose dislike to the drug had become crystallised into implacable hostility to its use.

No Commission had ever pronounced the drug to be innocuous. Every member of the medical profession who administered anæsthetics recognised that chloroform and ether were powerful drugs, and as such should be used with a full knowledge of the responsibility attending on their administration. Such knowledge can be attained only by study; it is not intuitive; and the study must take the form of carefully-conducted experiments and close clinical observation.

The question naturally arises, Were the Hyderabad anæsthetic experiments of such a nature as to command the approval of the members of the medical profession? Objection is taken to them on the grounds that the physiological effects of ether and chloroform on the lower animals are unsafe guides for their use on the human being; but hitherto no exception has been taken to similar experiments in the case of other drugs. Strychnin, digitalis, and the

majority of our more potent medicines have been administered to the lower animals with the express object of learning from their physiological effects the therapeutic action and the value of the drug in human diseases.

The Nizam's Commission used the higher mammalia for experimentation, many of the experiments being performed on apes; and we do not see that a closer approach to the human being could well be made—it should be as satisfactory as experiments made on frogs. Yet those who readily accept the results of experiments made on the vascular system of frogs with digitalis and other drugs, and act on them in practice, cavil at those made on the higher mammalia with ether and chloroform.

The cavilling is not alone confined to the animals selected. We are told that the climate of the Deccan, by its high temperature, vitiates, or at least lessens the value of, the experiments. Chloroform, according to the objectors, is better suited to hot climates than to cold or temperate ones—an objection of little value, when we remember that in Scotland, as in the Deccan, chloroform has proven its great worth.

Again, the ground of objection is shifted, and we are told that the deductions of the Commission are contradicted by the experience of operative surgeons, and in proof of this contention we are referred to the current medical literature, where “Death under Chloroform” is a frequent heading. For years past we have carefully examined home and foreign journals for records of deaths from anæsthesia, and we do not hesitate to say that they are much less numerous than is generally supposed. We find that when a death from chloroform is reported the case is freely copied. The fact that in the Indian Empire, the Colonies, the Western and Southern Commonwealths of the U.S.A., on the Continent of Europe, and throughout the great Southern Continent of America, chloroform is the favourite anæsthetic is a strong confirmation of the finding of the Hyderabad Commission. Used throughout the habitable globe, and manufactured in yearly increasing quantities, the drug is daily submitted by thousands of intelligent and interested observers to trial and bears the test. An occasional failure, it is true, now and then horrifies and intimidates a nervous anæsthetist, who promptly publicly recants and abjures the drug, and his conversion is hailed by the ether advocates “as a brand plucked out of the fire.”

This is not the proper spirit in which to approach a scientific

question. Medicine should be studied free from prejudice; to form theories from ascertained facts is allowable and desirable, but to twist facts to suit existing theories is unjustifiable.

The Edinburgh students taught by Syme found that, used as he directed, chloroform is a safe and reliable anæsthetic; but the same drug in the practice of some English and New England surgeons is declared to be most unsafe. A Commission sits to investigate the best means of ensuring safety under anæsthesia, and to decide on the relative merits of ether and chloroform. We have given their conclusions—conclusions which appear to us to be the natural outcome of the experiments, and in no sense of the word forced.

Nothing more distinctly shows the earnest desire of Surgeon-Major Lawrie and his colleagues to place the fullest information before the profession for their guidance on this great question than their including in the volume the replies made to their views. The ablest of the objectors, Mr. Alexander Wilson, of Manchester, writing in the *Medical Chronicle* of April, 1890, after summarising the opinions of Gibson, Wakley, Snow, and others on the question, writes:—

“There may be several objections taken to the unreserved application of the conclusions of these experiments to man.

“First, there is the difference which may exist in the action of chloroform on the heart of man and of animals. There is the possibility that the habits of life, the taking of stimulants and narcotics, especially the habitual use of drugs like tobacco—for the condition of the vagus centre is shown to be of great importance in relation to chloroform narcosis—may have some effect, if not in altering the behaviour of the heart muscle or its innervation, at least in modifying that chain of events upon which depends the absorption and distribution of the chloroform by the blood. Amongst other points of difference between man and the animals experimented on are the relation of the vital capacity to the size of the animal, and the interference with complete filling of its lungs, resulting from holding the animal.

“It has often been shown that the suddenly fatal cases are rare in human subjects in which there is any impediment to the free expansion of the chest—*e.g.*, Clover has pointed out that a phthisical patient is less likely to take a fatal dose of chloroform than one with healthy lungs, because his chloroform-absorbing capacity is diminished. Again, it has been noted that few patients die suddenly from chloroform, when it is inhaled lying on the side; also few, if any, sudden deaths are reported in cases of ovarian tumours. The explanation of these cases is that the interference with full expansion of the lungs by the position or the

presence of the tumour prevents the lungs taking in the necessary fatal dose.

“On the other hand, the greater number of the suddenly fatal cases occur in people with healthy chests and large vital capacity—*e.g.*, in reducing dislocations of the shoulder, and in minor operations, such as teeth extraction, especially in those in which the patient, being in the natural upright position, can give the respiratory muscles full play, and completely fill the chest.

“Thus it is worth considering if the holding of a struggling animal, such as a dog, might not so interfere with its breathing as to prevent the full dose being taken, especially as the animal would not be likely to be held in its natural position. There is an indication in the Report that, in at least some cases, the holding of the animal did actually interfere with its respiration. If it did so in one case it probably did so in many, especially as a dog's thorax is so shaped that to hold its fore legs together in front of it, would prevent the complete expansion of its chest, and so prevent it suddenly taking a fair dose of chloroform vapour.

“In animals, too, we have an absence of the desire to inhale freely. In at least one reported case the wish to inhale the chloroform freely contributed largely to the fatal result.

“In chloroform accidents in man, of the very sudden variety, considered to be due to cardiac syncope, a certain set of conditions are present which are difficult to obtain in animals.

“The subject is generally young or middle-aged, with an expansile chest; the chloroform is willingly inhaled, quietly at first, until semi-unconsciousness is produced, when the fauces and glottis are insensitive; then, during struggling, with or without holding the breath, the patient, often in an upright or semi-upright position, and having his arms fixed by the assistants, which gives his respiratory muscles good purchase, gets one or two deep inspirations at the greatest advantage, and so obtains the maximum amount of chloroform.

“There is the desire to get under the influence of the drug the voluntary inhalation followed by the still steady conscious anxiety to inhale more, and then the involuntary deep inspiration, in the natural position in which a deep inspiration can be best taken.

“All these are conditions difficult to obtain in experiments on animals, and it is only under such conditions that the supposed cardiac paralysis has been produced in man.

“The interval between the stoppage of the heart and the respiration is so short that these points, trivial though they seem, may easily be of importance in modifying the result.

“It has always been maintained by the advocates of the syncope theory that it is only under certain circumstances, and by a certain definite combination of factors, that chloroform sufficient in quantity to paralyse

the heart can be introduced into the blood, and that this particular combination of circumstances occurs very seldom—about once in every 1,000 or 2,000 administrations.

“Thus, as Dr. Snow pointed out years ago, the effect of chloroform on any given case varies with the amount contained in the blood at any given time.

“This depends upon the strength of chloroform vapour exhibited to the patient, the ease with which it is inspired through the glottis, and the depth and frequency of the inspirations; the amount actually absorbed depends upon the condition of the blood (its capacity for chloroform may vary), the time it stays in the lungs, the rapidity of the circulation, and other factors.

“The idea was that by certain combination of these several factors, the maximum quantity of chloroform was absorbed by the blood in the lungs and hurried to the heart, the next organ in the order of the circulation, not merely distending its cavities with chloroform-saturated blood, but also being distributed by the coronary arteries to every part of its substance, and so causing paralysis. This result is also assisted by the condition of distension of the heart and the venous condition of the blood.

“That the arrangement of these various factors—respiration, pulse, &c., has an important bearing in the action of the drug on the heart, is well shown by these experiments of the Commission. These showed that by varying the methods of administration in different experiments it was possible to make the heart cease beating at intervals of from one to twelve minutes after the cessation of the respiration. It is not impossible that by further variations the time might have been reduced until the stoppage was simultaneous with, or even preceded the cessation of respiration, and the experiments would have been thus made to accord with certain reported fatal cases in man.

“The cases in which the heart ceased soonest after the respiration were cases complicated with asphyxia—that is, cases in which semi-asphyxia was produced, presumably followed by deep inspiration; under these circumstances the heart ceased beating one minute after the respiration stopped. Now it is under conditions similar to these in man, that the so-called cardiac syncope occurs, and it is by working on these lines that attempts to produce it in animals should be made; but it appears that the Commission only made some four of these experiments, hardly a sufficient number upon which to base an important statement.

“In ordinary practice, the several conditions giving a fatal result from cardiac syncope are combined about once in every 2,000 or 3,000 administrations. Because the Commission did not obtain it in 600 attempts they conclude that it cannot exist. This is scarcely reasonable, especially as the bulk of their work was not upon the lines which promised the nearest result—viz., those of deep inspiration after semi-asphyxia.

“The manner or means by which the movement of the heart was tested are of some moment, as explaining the discrepancy between the results of experiment and practice. Most of the cases were tested by a needle introduced into the heart, or by opening the chest. These methods will indicate the merest quiver of the heart muscle—movements that would give no indication of their presence to ordinary observation, and movements that would probably be of no functional use—*i.e.*, in no sense contractions. It has been noticed by other observers, that the hearts of animals killed by chloroform show fibrillary irritability, after the heart muscle, as a whole, is incapable of contraction—a condition similar to this would indicate movement tested by the above, but such movement would be fallacious.

“It would be interesting to know the degree of action exhibited by the heart after cessation of the respiration. Was the power of propelling blood retained? If the action consisted only of muscular tremors it would be of little value, and hardly what is understood by action of the heart.

“The following case may be here quoted as a good example of the class of chloroform accidents, upon which is based the theory of the action of chloroform on the heart:—

“The patient was a strong, healthy labourer, who required an anæsthetic while some adhesions were broken down in his knee-joints; he had taken chloroform successfully three months previously. The case is reported by the surgeon who was superintending the administration of the anæsthetic. Chloroform was administered by a towel.—(*British Medical Journal*, 1884, Vol. II., p. 811.)

“‘The patient showed not the least sign of nervousness . . . and commenced inhaling by several rapid shallow breaths, as if determined to get quickly under the influence of the anæsthetic. Following immediately upon the shallow movements were three or four deep inspirations. Feeling that this method must have entailed a large and rapid consumption of chloroform, I directed the house surgeon to remove the cloth, when the patient, *though still breathing*, was seen to have his eyes wide open, the pupils rapidly dilating, and the conjunctiva insensible. The face was neither livid nor pale; the lips, indeed, were of their normal pink hue, and the cheeks slightly flushed. In fact, beyond the condition of the eyes, there was nothing in the facial aspect to excite alarm. Up to this point, the time of the inhalation could not have exceeded one to two minutes. On feeling the right radial no pulse could be detected. The head was lowered, respiration then ceased; not, however, until three or four breaths had been drawn after the recognised cessation of the pulse. After the commencement of artificial respiration, the patient spontaneously made several gasps, but there were no further signs of vitality.’”

“This case is valuable because it is reported, not by the administrator of the anæsthetic, but by one who was merely watching the case, and who had ample time accurately to note the events which occurred; and the absence of struggling, so common in suddenly fatal cases, made the observation of the symptoms easy.

“Taken in conjunction with the numerous reported cases in which the patient passes suddenly from a condition of active struggling to a state of collapse, with gasping respiration and absence of pulse, it proves that chloroform, if it does not actually paralyse the heart, may cause death by some means equally sudden and certain; and that in such cases the heart is practically stopped, as far as its functional value is concerned, before the respiration. The case indicates also that observation of the respiration alone will not give adequate warning of danger, for the respiratory movements may be perfect one second and the next be on the verge of extinction, and hopelessly beyond recovery. It also shows that fatal damage may have been wrought on the system before there is any outward sign.

“This case is also noteworthy as contradicting the statements made by the first Hyderabad Chloroform Commission that, since 1856, no death from chloroform has occurred in which the respiration and the respiration alone, was attended to throughout the administration.

“The patient was breathing perfectly, and there was no sign of respiratory failure when the administration was suspended, so that was the respiration alone observed it would only have signalled any danger some seconds later. There can be little doubt but that the pulse in such a case, where the patient was quiet and breathing tranquilly, would have exhibited some decided alteration had it been observed.

“In the second portion of the Report it is shown that the essential action of chloroform on the system is to cause a fall in the mean blood-pressure. This fall is proportionate to the amount of chloroform inhaled and absorbed into the system. [It would have been interesting to have known the relation, if any, the condition of the blood-pressure bore to the state of anæsthesia.]

“This fall in blood-pressure bears some relation to the respiration, but what this relation is is not distinctly stated, and the cause of the fall in pressure is also not clearly assigned, except (Sec. 19) that it is not due to the direct action of chloroform on the heart, and must be due to paralysis of the vaso-motor centre. This is important when taken in conjunction with the following parts of the Report (Sec. 3): ‘ . . . If the chloroform is pushed further there comes a point not easy to define when the blood-pressure and respiration will no longer be restored spontaneously, although the heart continues to beat after the inhalation has stopped.’ And also (Sec. 25): ‘ . . . It is never in any case certain that artificial respiration will restore the natural respiration and blood-pressure, no matter how soon it is commenced after the respiration stops.’

"This exposes a comparatively new and insidious danger in chloroform administration, and one as difficult to treat as the old cardiac syncope. It is quite conceivable that under certain circumstances the dose necessary irretrievably to damage the vaso-motor centre may be inhaled with extreme rapidity, and that while the respiration and pulse are still present the centre may be almost paralysed before such warning has been given.

"From a record of fatal cases in man, it appears possible that this paralysis may, in certain conditions, be effected almost instantaneously, and before complete insensibility has been produced.

"In Section 20 injection of chloroform into the jugular vein caused no paralysis of the heart. It should be noted that this is not the most direct channel by which the heart can be reached; and the experiment, when compared with inhalation, is open to criticism. Chloroform injected into the jugular vein passes with the venous blood to the right auricle, where it is mixed with the blood of the inferior vena cava from the liver; from the right side of the heart it passes to the lungs, where the chloroform, being volatile, and the air in the alveoli of the lungs free from chloroform, a good deal may be lost; finally, what remains of it reaches the heart.

"Chloroform given by inhalation is much more likely to reach the heart directly in large doses passing into the air cells; about one-fifth of the whole blood of the body is at once exposed to it. This blood, saturated with chloroform and unmixed with any non-chloroformed blood, goes direct into the left auricle and ventricle, and by the coronary arteries is first distributed into the very substance of the heart itself. As Dr. Snow puts it: 'In inhalation the heart is always a little in advance of the rest of the body as regards the amount of chloroform vapour to which it is subjected.' Chloroform thus given by inhalation may have a more potent action than when injected into a vein, and the results of the two methods cannot well be compared.

"In Section 12 the effect described as that of asphyxia on the blood-pressure, in causing a rapid fall of blood pressure and slowing of the heart beat, is contrary to the received ideas on the subject. ('Human Physiology.' Landois and Stirling. 1888 edition, p. 198). During asphyxia, 'the blood-pressure measured in a systemic artery—*e.g.*, the carotid—rises very rapidly and to a great extent during the first and second stages; the pulse beats are at first quicker, but soon become slower and more vigorous. The rise in pressure is due to stimulation of the general vaso-motor centre by the venous blood, and the slow beating of the heart to the action of the venous blood, on the cardio-inhibitory centre in the medulla.'

"The attempts to produce shock during the inhalation of chloroform (Sec. 33) uniformly failed. In experimenting on animals there are several

sources of error. In the first instance, it is doubtful if animals suffer as much from shock as man, there is an absence of mental terror and the depressing effect of the anticipation of the operation, &c.

“It is well known that the extraction of a single tooth in a state of semi-anæsthesia may produce a considerable amount of shock, and a painful mental impression that lasts for weeks—an amount of shock far greater than would have been felt had no anæsthetic been exhibited.

“The lowering of the blood-pressure in the case of a fatty heart (Sec. 39) cannot be altogether an advantage in chloroform administration. It must, by the efforts the heart makes to keep up the pressure, increase the work of the heart, and at the same time diminish the blood supply to the heart itself.

“It is important to note that in all these experiments there are double and treble reactions, which, though they have a beneficial effect in diminishing the amount of chloroform absorbed, are in themselves elements of danger.

“Thus semi-asphyxia and inhibition of the heart are elements of safety by preventing the ‘intake’ and distribution of chloroform, but the ultimate result of this is to cause rapid breathing and quick pulse, which, by the extra ‘intake’ of chloroform and the quick distribution of that already inhaled, is an element of danger.

“This change from a slow to a rapid pulse may be attended with very nearly fatal results, as is shown in Sec. 34, where an animal was nearly killed by a short inhalation, from the inhibition of the vagus having been stopped, and a more rapid pulse consequently resulting. This fall in pressure is in itself, in feebly nourished subjects, a source of danger, causing syncope from cerebral anæmia.

“There is a peculiar animus against the feeling of the pulse displayed by Surgeon-Major Lawrie in the first Report, and not entirely absent in the second. He goes so far as to state, ‘that since the year 1855, in Great Britain, there is no death from chloroform recorded in which it was proved that the respiration alone was attended to throughout the inhalation.’ This is surely a mistake; there are several fatal cases where the respiration only was attended to, one of which is quoted here, and there are many more in which respiration was attended to as fully as possible.

“Then reference is made to the teaching of what are termed antagonistic schools: Syme taught—‘We are guided as to the effect of the chloroform not by the circulation, but entirely by the respiration.’ Erichsen teaches: ‘When fully anæsthetised the patient requires the most careful watching by the person who administers the chloroform; his finger should never be off the pulse, nor his eye taken away from the countenance of the patient.’

“Surgeon Lawrie considers these opinions ‘absolutely irreconcilable.’

They are nothing of the kind. Erichsen's directions are only a little fuller and more complete than Syme's, and not incompatible with his.

"I do not know the wording of the earlier editions of Erichsen, but in recent ones (edition of 1884, Vol. I., p. 24), in addition to the words quoted it is stated, 'the breathing must be carefully observed.' It is unlikely that it is not mentioned in some part of the earlier editions, especially as Dr. Snow, with whose works Mr. Erichsen would no doubt be familiar when writing the above, constantly emphasises the necessity for observing the state of the respiration and in reference to this point says:—'The importance of attending to the respiration of the patient has previously been noticed, and it is so obvious a symptom that it can hardly be disregarded if any one is watching the patient; it speaks, moreover, almost to one's instincts, as well as to one's medical knowledge.' ('Snow on Anæsthetics,' p. 258, 1888).

"Apart from any action which chloroform may have on the heart itself, the experiments made supply abundant reason for a careful observance of the pulse during the administration of the drug, and it is surprising that this point has not been referred to in the Practical Conclusions. Its omission looks suspiciously like the result of prejudice against it.

In the Report it is shown that the amount of chloroform inhaled (the 'intake') depends upon the respiration, but that the effect of this 'intake,' the way in which it is utilised, lies with the circulation, with the force and rapidity of the pulse or the reverse.

"It is shown that, with a slow pulse, concentrated chloroform vapour can be exhibited with impunity, but with a full, bounding pulse dilute chloroform vapour may be dangerous. These variations occur in practice, from the quick full pulse of a patient with a high temperature to the slow pulse of a patient with jaundice.

"There have been fatal cases in man distinctly due to a non-consideration of these points. [Case reported in *British Medical Journal*, 1887, Vol. II., p. 951, where ether was given first, and then a small dose of chloroform proved fatal.] This is again illustrated in Experiment 177, Section 34, where sudden quickening of the pulse, from cessation of vagus inhibition, suddenly placed the animal in a condition of 'extreme and unexpected jeopardy.' Yet from some reason, though stress is laid upon these points in the Report, they are omitted from the Practical Conclusions. This is the more strange, as the Commission certainly proves that the circulatory apparatus is first influenced by the chloroform, and it is by vaso-motor paralysis that death is caused. Why, then, disregard it in administering the drug?

"As attention to the pulse is so easily managed without neglect of the respiration, and a proper knowledge of the state of the circulation has been proved to be most essential to the intelligent administration of an

anæsthetic, it is advisable that the pulse should always be observed; it can, at least, do no harm, and, in conjunction with the respiration, is a valuable help, quite apart from any information it gives of the general condition of the patient.

“The assistant in charge of the anæsthetic must endeavour to be more than a mere doer out of innocuous doses of chloroform; he should keep himself in touch with the whole condition of the patient all through the operation.^a To endeavour to narrow his work to mere watching of the respiration is mistaken policy.

“In reference to the question of cardiac *versus* respiratory paralysis, the following remarks appeared in the *Lancet* for September 21, 1889:—

“‘In the Scotch capital, failure of respiration is regarded as the chief or only danger; while in the metropolis, failure of the heart is more feared. It is quite possible that the surgeons in both cities are right, and that the habits or mode of living of the people may lead to differences in resisting power of the cardiac or respiratory apparatus respectively. The proportion of gouty patients is much larger in London than in Edinburgh, and when we consider that the natives of India appear to resemble the Scotch in their comparative immunity from cardiac paralysis by chloroform.’ As most cases of death from chloroform are put down as due to cardiac paralysis, and this is said to rare in Scotland, the impression is conveyed that fatal cases of chloroform narcosis are unknown or rare in that country, and there is certainly an idea abroad to this effect. It is not necessary to resort to a comparison of the habits of the people to explain their immunity from fatal results.

“In Scotland fewer people die from chloroform, simply because fewer people inhale it. A population of 3,991,499 must necessarily give fewer chances for the administration of chloroform than one of 28,247,151 and consequently fewer possibility of fatal cases. Another point is, that such cases as do occur are not always, from the absence of coroners’ inquests, brought to light, a large number, if not the majority, of the fatal chloroform cases in England, owing their publicity to the newspaper reports of the coroners’ inquests.

“But deaths from chloroform *do* occur in Scotland and even in Edinburgh. A casual search in the medical journals gives the following figures: Edinburgh Royal Infirmary (1878 to 1880), three deaths; Western (Sir George Macleod’s Hospital) Infirmary, Glasgow (1883 to 1885), three deaths; Royal Infirmary, Glasgow (1883 to 1885), two deaths; other parts of Scotland (1881 to 1883), six deaths. England, 110 deaths; Scotland, 14 in same period. England, population 28,247,151; Scotland, 3,991,499.

“In summing up the results of the latest Commission on chloroform it is to be remembered that, in the opinion of many persons, as regards the

^a *Vide* Note by the Commission at the end of Mr. Wilson’s article.

first part of their work—viz., the investigation of the point, does chloroform paralyse the heart? nothing new has been added to our knowledge.

“The result has been to confirm the work of some of the previous experimenters, but without explaining how the theory of cardiac paralysis appeared to be borne out by the experiments of Dr. Snow. There has always been since the discovery of chloroform sufficient evidence to prove that it is very difficult, if not impossible, to produce sudden cardiac paralysis by it in animals, and an equal amount of clinical evidence to justify the supposition that such can occur in man.

“To estimate the value and importance of the second part of the Report, it must be noticed that the action of chloroform on the heart was (by the advocates of this anæsthetic) considered to be the *only* objection to its general use. It was this supposed power of causing irremediable cardiac paralysis which made people afraid of it. If this property could be shown to be non-existent the harmlessness of the drug would be established.

“This is easily understood, from the facts that artificial respiration is so readily carried out, and cessation of respiration remedied by artificial respiration so common, that the impression is prevalent that it is easy to breathe for a person, but the remedying of the cessation of the heart-beat presents insuperable difficulties.

“It was not imagined that chloroform might possess other dangers—it is for a knowledge of these that we are indebted to the Commission—viz., the importance of the part played by vaso-motor paralysis in the causation of death, and the fact that the paralysis of the respiratory centre may be final at the moment that attention is drawn to the cessation of respiration.

“If the conclusions of the Commission are accepted in full without reserve, chloroform has no power of paralysing the heart; one danger is removed, but it is replaced by one as great in every respect—viz., paralysis of the vaso-motor centre. This may set in very suddenly, with hardly any warning; it is as far beyond treatment as cardiac paralysis, and it is as fatal. If the cardiac paralysis from chloroform does not exist, vaso-motor paralysis must have been the cause of the numerous deaths recorded against chloroform; and how sudden and irremediable this is the reports of fatal cases abundantly testify.

“When death occurs from vaso-motor paralysis it is clearly imaginable that the vaso-motor centre may be hopelessly damaged or rapidly reaching that stage, while the pulse is still present and the heart attempting to keep up the pressure. So that for some seconds there may be a deceptive condition in which both pulse and respiration are present, yet a fatal termination is imminent. That this death from vaso-motor paralysis does occur in man is shown by the very rapid running pulse mentioned in some cases as preceding the fatal termination.

“The extensive experiments of the Commission have left the chloroform question in the following condition: It was not found possible to directly paralyse or affect the heart by chloroform in some 600 administrations. Death from chloroform is due apparently to paralysis of the vaso-motor and respiratory centres—probably one or both of these may be affected. When death occurs it is the result of an overdose of the drug.

“It cannot be too strongly insisted that the work of the Commission gives us no greater confidence in chloroform than we had before. That it does not cause cardiac paralysis is no safeguard, since it produces as sudden and equally fatal vaso-motor paralysis, and respiratory paralysis in addition. Its physical and chemical properties remaining the same, the danger of permitting the patient to inhale an overdose will remain as great as ever.

“In the Practical Conclusions no directions are given for its administration beyond those which have been in use for years, and in the presence of which so many fatalities have occurred, either from vaso-motor, cardiac, or respiratory paralysis.

“In the face of these it is hardly to be expected that the deaths from chloroform will much diminish.”

This by far the ablest adverse criticism of the work of the Commission gained weight from the scientific spirit in which the article had its genesis, the moderate language in which the objections were stated, and the recognised worth and high standing of the magazine in which the contribution appeared.

Fortunately the reply fell into the hands of one very familiar not alone with the working of the Committee but with the whole literature of the subject, and soon after Mr. Alexander Wilson's review appeared, Surgeon-Major Lawrie replied as follows:—

“In the *Medical Chronicle* of February, 1890, there is an ably-written review of the Hyderabad Commission's Report on ‘Chloroform,’ signed ‘Alexander Wilson.’ The review ends thus:—‘Increased knowledge has added nothing new to the directions for its’ [chloroform's] ‘administration.’ I hope that on consideration Mr. Wilson will see fit to modify this statement, which is inconsistent with fact.

“The Hyderabad Commission was appointed to confirm or disprove Syme's and Simpson's principles that we should be guided as to the effect of chloroform entirely by the respiration. The Commission has not only proved that these principles are sound, but has also proved that the art of administering chloroform with safety consists in keeping the breathing absolutely regular throughout the inhalation. This proof is new, and has never been established before. As far as I am aware there is no text-

book on surgery of the present day, except Sir Joseph Lister's article in 'Holmes's Surgery,' that does not recommend that the pulse as well as the respiration should be watched for signs of the effect of chloroform, and it is new to prove, as the Hyderabad Commission has proved, that to watch the pulse at all is both wrong and dangerous.

"The photograph of two original tracings of Experiment No. 186 which accompanies this paper demonstrates the futility of attention to the pulse in chloroform administration. For example, in Tracing III., Ludwig, though the pulse of the dog experimented on was apparently much better at 2 hours 55 minutes than at 2 hours 54 minutes, it was not really so. Dr. Gaskell has shown that when the blood-pressure is high the pulse must necessarily be better than when the blood-pressure is low. The pressure at 2 hours 54 minutes was much higher than at 2 hours 55 minutes, and the pulse was therefore in reality better in proportion, though it was smaller in the tracing.^a On the other hand, the danger of waiting for signs in the pulse of failure of the heart under chloroform is well shown in the Tracing IV., Ludwig, at the end of which the failure of the pulse at 3 hours 19 minutes 15 seconds, was a sign of impending death.

"The two tracings demonstrate all that it is possible to know regarding the safe administration of chloroform, and are well worth careful examination. (Everything which occurred in the experiments was marked and recorded on the tracings as the drum revolved, and nothing except what is written in red ink^b was added afterwards). The most remarkable points they exhibit are (a) the uniformly gradual and regular fall of blood-pressure which occurs when chloroform is administered in such a way that the breathing is perfectly regular, and (b) the entire absence of danger if the administration is stopped when the animal or patient is 'under.' Formerly we were told that chloroform lowers the blood-pressure; that this in itself shows that its administration is dangerous; and that occasionally the fall is so unexpected and capricious as to produce sudden death by stoppage of the heart. The Hyderabad Commission has shown (1) that the lowering of the blood-pressure, which chloroform and all anæsthetics cause when efficiently administered, is in itself a harmless event, if the respiration alone be attended to and taken as a guide, and if the administration be stopped when the patient is fully anæsthetised; and (2) that the sudden falls of pressure which the Glasgow Committee asserted are dangerous, and attributed to chloroform, are due to stimulation of the vagus, and, by slowing the circulation, are a safeguard against overdosing. The Hyderabad Commission has further proved that all irregularities in the fall of the blood-pressure and in the circulation under chloroform, including such an irregularity as dilatation

^a This statement is open to correction.

^b Black in the diagram.

of the heart, which never occurs when chloroform is administered properly, are due to improper administration, with irregular breathing and insufficient air.

“There is no loophole of escape for the opponents of principles which Syme long ago showed to be essential for safety in the administration of chloroform. Tracings 3 and 4 of Experiment No. 186 of March 6th, 1890, were not produced accidentally, but are examples of what happens in every case of chloroform inhalation without exception, whether in man or in animals, where the breathing is perfectly regular. Anyone who is taught to give chloroform in the right way can obtain the same sequence of events clinically, which the tracings portray experimentally; and I undertake to produce them invariably in any laboratory or operating room in the world. My students do it here every day, and if we can do it anybody can do it. The irregularities in the tracings of the Glasgow Committee, and Professor Macwilliam's more recent bogey of dilatation of the heart, are due to obstruction of the circulation in the lungs through interference with, or irregularity of, the respiration. The proof of this is furnished by the experimenters themselves. The Glasgow Committee state that in their experiments the anæsthetic was administered in a cloth, *saturated with chloroform*, held over the face—*i.e.*, with insufficient air. In Professor Macwilliam's experiments the chloroform was pumped into the lungs with bellows. Professor Macwilliam states that only a certain percentage of chloroform, 1 to 5 per cent., was allowed to get into the air in the experiments he performed in this manner. Before we can accept his conclusions, however, he is bound to demonstrate that air containing from 1 to 5 per cent. of chloroform, blown into the trachea with bellows, is incapable of producing obstruction of the circulation or respiration in the lungs. Obstructed circulation in the lungs and a rapidly falling blood-pressure are more than enough to account for the dilatation of the whole heart, which occurred in his experiments, and which he wrongly attributed to the direct action of chloroform. It is amusing to contrast Professor Macwilliam's statements regarding the danger of dilatation from the direct action of chloroform on the heart in the laboratory with Dr. James Dunlop's clinical experience, as narrated in the *Lancet* of September 27th, 1890, that in typical cases of death from the direct action of chloroform the heart is empty and flaccid. Perhaps Mr. Alexander Wilson will assert that Professor Macwilliam's statements ‘are only a little fuller and more complete’ than Dr. Dunlop's, and that they are ‘not incompatible,’ which is the view he takes of Erichsen's teaching that the pulse should always be taken as a guide, and Syme's teaching that it should never be taken as a guide in chloroform administration.

“I am satisfied to leave the question of chloroform administration to the judgment of the readers of the *Medical Chronicle*. I have always

understood that, next to saving life, the prevention and relief of pain are among the most important duties of our profession. According to the teaching of the Hyderabad Commission, pain may safely be prevented and relieved with chloroform by any intelligent and properly taught medical practitioner; and there can be no question that every medical man ought to be able to give a dose of chloroform with as much precision and certainty as a dose of morphine, or of any other poison. The practical outcome of the disastrous teaching of the Glasgow Committee, backed up by Professors Wood and Macwilliam, is that the relief of pain by chloroform is to be handed over to specialists, who alone are to administer it, though their own declarations and statistics show that they cannot give it with safety. Exactly in proportion as this teaching gains ground the bulk of the profession suffers loss in credit and in pocket, and the advantages chloroform confers are most seriously restricted and curtailed. There is no more necessity for the anæsthetist, with his inhaler and other apparatus, than for a hypodermic morphia injectionist, or other poisonist. If the anæsthetist is to be tolerated hereafter at all, it must be because he is a man of pleasant presence and cheerful countenance, who knows how to comfort and re-assure the patient until chloroform oblivion is secured."

Part IX. deals with clinical results. Since the completion of the experiments of the Commission a system of note-taking in chloroform administration has been in operation in the Afzulgunj Hospital.

In the first 272 cases in which an accurate record of chloroformisation was kept, the notes were taken by students. The average time to produce anæsthesia in these cases, which include children and adults, was 3m. 44s. In 82·9 per cent. abolition of the corneal reflex, in 16·8 per cent. stertorous breathing, and in 1 case complete relaxation of the muscles, was the first sign of full anæsthesia. "There was no instance of respiratory embarrassment or of accident or delay of any kind due to overdosing, and the patient was never allowed to inhale the anæsthetic while the breathing was in any way irregular."

The administration of chloroform in the Afzulgunj Hospital is now conducted in the following manner. When all is ready for the operation, the surgeon gives the signal to begin the inhalation, for which Surgeon-Major Lawrie gives the following rules:—

"(1) The chloroform should be given on absorbent cotton stitched into an open cone or cap.

"(2) To ensure regular breathing the patient, lying down, with everything loose about the neck, chest, and abdomen, should be made to blow

into the cone held a little distance from the face. The right distance throughout the inhalation is the nearest which does not cause struggling, or choking, or holding of the breath. Provided no choking or holding of the breath occurs, the cap should gradually be brought nearer to, and eventually may be held close over, the mouth and nose as insensibility deepens.

“(3) The administrator’s sole object while producing anæsthesia is to keep the breathing regular. As long as the breathing is regular, and the patient is not compelled to gasp in chloroform at an abnormal rate, there is absolutely no danger whatever in pushing the anæsthetic till full anæsthesia is produced.

“(4) Irregularity of the breathing is generally caused by insufficient air, which makes the patient struggle or choke or hold his breath. There is little or no tendency to either of these untoward events if sufficient air is given with the chloroform. If they do occur the cap must be removed and the patient must be allowed to take a breath of fresh air before the administration is proceeded with.

“(5) Full anæsthesia is estimated by insensibility of the cornea. It is also indicated by stertorous breathing, or by complete relaxation of the muscles. Directly the cornea becomes insensitive, or the breathing becomes stertorous, the inhalation should be stopped. The breathing may become stertorous while the cornea is still sensitive. The rule to stop the inhalation should, notwithstanding, be rigidly enforced, and it will be found that the cornea always becomes insensitive within a few seconds afterwards.

“It is only necessary to add that the patient should be so dressed for an operation that his respiratory movements can be seen easily by the chloroformist. In the climate of India this is not difficult to manage, but it is difficult to manage in the climate of Europe; so that in this respect, and in this respect alone, the chloroformist in England is placed at a distinct disadvantage compared with the chloroformist in India. Proceeding in the above way chloroform never produces any bad effects, and its administration, in any case which is fit for an operation, is entirely free from danger.”

And the following Practical Conclusions are given at page 395:—

“I. The recumbent position on the back and absolute freedom of respiration are essential.

“II. If during an operation the recumbent position on the back cannot, from any cause, be maintained during chloroform administration, the utmost attention to the respiration is necessary to prevent asphyxia or an overdose. If there is any doubt whatever about the state of respiration, the patient should be at once restored to the recumbent position on the back.

“III. To ensure absolute freedom of respiration, tight clothing of every kind, either on the neck, chest, or abdomen, is to be strictly avoided; and no assistants or by-standers should be allowed to exert pressure on any part of the patient’s thorax or abdomen, even though the patient be struggling violently. If struggling does occur, it is always possible to hold the patient down by pressure on the shoulders, pelvis, or legs without doing anything which can by any possibility interfere with the free movements of respiration.

“IV. An apparatus is not essential, and ought not to be used, as, being made to fit the face, it must tend to produce a certain amount of asphyxia. Moreover, it is apt to take up part of the attention which is required elsewhere. In short, no matter how it is made, it introduces an element of danger into the administration. A convenient form of inhaler is an open cone or cap with a little absorbent cotton inside at the apex.

“V. At the commencement of inhalation care should be taken, by not holding the cap too close over the mouth and nose, to avoid exciting struggling, or holding the breath. If struggling or holding the breath do occur, great care is necessary to avoid an overdose during the deep inspirations which follow. When quiet breathing is ensured as the patient begins to go over, there is no reason why the inhaler should not be applied close to the face; and all that is then necessary is to watch the cornea and to see that the respiration is not interfered with.

“VI. In children, crying ensures free admission of chloroform into the lungs; but as struggling and holding the breath can hardly be avoided, and one or two whiffs of chloroform may be sufficient to produce complete insensibility, they should always be allowed to inhale a little fresh air during the first deep inspirations which follow. In any struggling persons, but especially in children, it is essential to remove the inhaler after the first or second deep inspiration, as enough chloroform may have been inhaled to produce deep anæsthesia, and this may only appear or may deepen after the chloroform is stopped (*vide supra* sub-paragraphs 2 and 9 of Conclusions in paragraph 30). Struggling is best avoided in adults by making them blow out hard after each inspiration during the inhalation.

“VII. The patient is, as a rule, anæsthetised and ready for the operation to be commenced when unconscious winking is no longer produced by touching the surface of the eye with the tip of the finger. The anæsthetic should never, under any circumstances, be pushed till the respiration stops; but when once the cornea is insensitive, the patient should be kept gently under by occasional inhalations and not be allowed to come out and renew the stage of struggling and resistance.

“VIII. As a rule, no operation should be commenced until the patient is fully under the influence of anæsthetic, so as to avoid all chance of death from surgical shock or fright.

“IX. The administrator should be guided as to the effect entirely by the respiration. His only object, while producing anæsthesia, is to see that the respiration is not interfered with.

“X. If possible, the patient's chest and abdomen should be exposed during chloroform inhalation, so that the respiratory movements can be seen by the administrator. If anything interferes with the respiration in any way, however slightly, even if this occurs at the very commencement of the administration, if breath is held, or if there is stertor, the inhalation should be stopped until the breathing is natural again. This may sometimes create delay and inconvenience with inexperienced administrators, but experience will make any administrator so familiar with the respiratory functions under chloroform that he will, in a short time, know almost by intuition whether anything is going wrong, and be able to put it right without delay before any danger arises.

“XI. If the breathing becomes embarrassed, the lower jaw should be pulled, or pushed from behind the angles, forward, so that the lower teeth protrude in front of the upper. This raises the epiglottis and frees the larynx. At the same time, it is well to assist the respiration artificially until the embarrassment passes off.

“XII. If by any accident the respiration stops, artificial respiration should be commenced at once, while an assistant lowers the head and draws forward the tongue with catch-forceps, by Howard's method, assisted by compression and relaxation of the thoracic walls. Artificial respiration should be continued until there is no doubt whatever that natural respiration is completely re-established.

“XIII. A small dose of morphia may be injected subcutaneously before chloroform inhalation as it helps to keep the patient in a state of anæsthesia in prolonged operations. There is nothing to show that atropine does any good in connection with the administration of chloroform and it may do a very great deal of harm.

“XIV. Alcohol may be given with advantage before operations under chloroform, provided it does not cause excitement, and merely has the effect of giving a patient confidence and steadying the circulation.”

While the inhalation is proceeding no one is allowed to do anything in the operating room, not even speak, and everybody's attention is thus concentrated on the administration until the patient is fully anæsthetised. From the moment the inhalation is commenced until anæsthesia is produced, the surgeon records every event, even of the most trivial kind, with the exact time of its occurrence.

To these excellent directions Surgeon-Major Lawrie adds the

following statement, which we would like to see illuminated and hung in every operating room:—

“Normal respiration is compatible with normal inhalation and normal anæsthesia.”

As an example of the note-taking during chloroformisation we give the following case:—

“August 24th, 1891.—No. 279.

“Temperature of room 73·1° F. Healthy Hindoo male, Kissensingh, ætat. 40. Disease—necrosis of the lower jaw. Operation—removal of dead bone. Chloroformed by student Krishtiah at 8h. 52m. 0s. Full anæsthesia at 8h. 59m. 55s.; the administration was slow on account of bleeding into the mouth. (A probe had been introduced into the sinus before the operation was decided on).

“*Observations.*

	H.	M.	S.	
“A.	8	52	0.	—Chloroform on cap; blowing regularly.
“B.	8	53	5.	—Cap brought close to face.
“C.	8	54	30.	—More chloroform; two breaths of fresh air.
“D.	8	55	40.	—Noisy expiration.
“E.	8	56	20.	—Coughing violently; one breath of fresh air.
“F.	8	57	20.	—More chloroform on cap; two breaths of fresh air.
“G.	8	59	55.	—Cornea insensitive; administration continued till 9h. 4m. 55s.”

We have devoted an unusually large amount of space to the notice of this great work, which is at once one of the most practically useful and scientifically accurate of modern medicine. It commands respect from all readers, both for its originality and for the painstaking and trustworthy record which it contains of the numerous, well-devised, and instructive experiments which the able scientists of the Commission so successfully carried out.

That the Commission has rehabilitated chloroform in the good opinion of the medical profession is known to all, but we venture to say it has done much more—it has placed the value of chloroform on a scientific basis, firm as the everlasting hills.

GEORGE FOY.

Text-book of the Principles and Practice of Medicine. By the late CHARLES HILTON-FAGGE, M.D., F.R.C.P., Physician to, and Lecturer on Pathology in, Guy's Hospital; Examiner in Medicine in the University of London; and PHILIP HENRY PYE-SMITH, M.D., F.R.S., Fellow of the Royal College of Physicians; Physician to, and Lecturer on Medicine in, Guy's Hospital. Third Edition. London: J. & A. Churchill. 1891. 8vo. Vol. I., pp. 1186. Vol. II., pp. 1023.

THE posthumous first edition of Dr. Hilton-Fagge's great work was reviewed at length in the number of this journal for January, 1887 (Vol. LXXXIII. No. 181. Third Series, page 84). A second edition was published in 1888, in which large additions were made to the sections in the second volume on Diseases of the Heart, Pneumonia, Intestinal Obstruction, Diseases of the Liver, Anæmia, and Diseases of the Joints. At the same time, in the first volume, chapters were added, or re-written, on Pyæmia, Enteric Fever, Febricula, Vaccinia, Rubeola (Rötheln), Actinomycosis, Peripheral Neuritis, Friedreich's and Thomsen's Diseases, Insular Sclerosis, and Insanity—this last chapter being written by Dr. G. H. Savage.

The present, or third, edition saw the light in July, 1891, and should long since have been reviewed in our pages. For the delay we tender an apology to Dr. Pye-Smith, whose name and fame are now more than ever identified with this splendid and classical work. In his preface he indicates the chief alterations in the new edition. The introduction has been re-written. The treatment of enteric fever and of diphtheria, and the pathology of cholera and ague, have been considerably expanded. The chapters on diseases of the heart have been revised and, in great part, re-written. The chapter on phthisis has been in parts condensed, in others expanded. "It had been already sent to press some time before the publication (at once, too late and too early) of the method of treatment by inoculation, introduced by the eminent discoverer of the essential nature of this disease, as well as (in all probability) of that of cholera." It is naïvely added: "The circumstances, however, of the announcement and practice of this method were such, and the disappointment of the hopes at first existed [? excited—ED.] has been so great, that the omission is, perhaps, not to be regretted."

The accounts given of influenza, diabetes, and anæmia, have

in particular been brought up to date. As regards influenza, we are, however, surprised to find it still described under the heading, "Catarrhal Disorders of the Air Passages," in company with coryza, ozæna, hay fever, whooping-cough, and asthma. Surely, influenza, at all events, would more fitly find its place among the specific infectious diseases, "affecting the whole body and accompanied by fever." The specificity of whooping-cough also admits of no question, and is, indeed, fully acknowledged by the authors when they write: "The *incubation* of whooping-cough after infection is, perhaps, variable—probably a fortnight as a rule, but often less."

One of the distinctive features of this great work is the introduction into both volumes of very full indexes of both subjects and authors. This is a convenience of the first importance to the reader. Another innovation of more questionable utility and taste is the superscription of each chapter with a classical or poetical quotation. In some instances, no doubt, these quotations are thoroughly appropriate—for example, in the chapter on "Inflammation," where the definition of Celsus is given—"Notæ vero inflammationis sunt quatuor: rubor et tumor, cum calore et dolore." Sometimes, however, the quotation excites a sense of the ridiculous, as when we read, under "Varicella," Dryden's lines:

"Each little pimple had a tear in it,
To wail the fault its rising did commit ;"

or, under "Chronic Deep Inflammations and Hypertrophies" of the skin, from Shakspeare's *Henry V.*:

"His face is all bubuckles and welks and knobs and flames of fire."

That Dr. Pye-Smith is a classical scholar there can be no doubt, and besides the many apt quotations at the heads of chapters, there are occasional instructive footnotes of great value. One of these may here be reproduced—"Πλευρίτις sc. νόσος, i.e., the 'side-complaint,' the stitch in the ribs. The adjectival termination, *ιτις*, has been taken from this word and from *φρενίτις* to denote inflammation, and has thus been used to form peritonitis, nephritis, orchitis, and so on." This is quite correct, for *φρενίτις* (gen. *φρενίτιδος*) is properly a feminine adjective. Thus, in Plutarch, we find the full expression; ἡ φρενίτις νόσος, a disease of the mind.

It would be idle to attempt to analyse in detail the contents

of this great work, which runs to considerably more than 2,000 pages. We can but reiterate the opinion expressed in our notice of the first edition, that the work is an English classic, which will establish the reputation for all time of Dr. Hilton-Fagge as a physician, an original thinker, and a close and accurate observer. That the intrinsic merit of his text-book has not suffered at the hands of Dr. Pye-Smith will be manifest from the reference in this review to the changes he has made in the present edition.

Atlas of Clinical Medicine. By BYROM BRAMWELL, M.D., F.R.C.P., Edin.; F.R.S., Edin.; Assistant Physician to the Edinburgh Royal Infirmary, &c., &c. Volume I. Part IV. Edinburgh: T. and A. Constable. 1892. Folio.

TRUE to his promise, Dr. Byrom Bramwell gave to the medical world the fourth and concluding part of the first volume of his magnificent work on the morrow of May Day, 1892. It is fully up to the high standard of excellence already attained by the author in the previous parts.

Included in the present fasciculus of the Atlas is a monograph on smallpox, which runs to 29 large folio pages, and is illustrated by temperature charts, a plate containing nine beautifully finished and coloured drawings of the eruptions of smallpox and vaccina, and three plain lithographs of smallpox eruption and its results. This monograph gives a truthful description of smallpox and its varieties, the diagnosis, prognosis, and treatment of the disease. Figure 6 in Plate XXI. purports to be a drawing of hæmorrhagic smallpox, but is really one of *variola hæmorrhagica pustulosa* of Curschmann. In this variety, the purpuric or hæmorrhagic tendency does not appear until a late stage, when the pustules are already formed. In ordinary *variola hæmorrhagica* (the *purpura variolosa* of Curschmann) the purpuric or hæmorrhagic tendency shows itself—it may be—from the outset, and may indefinitely postpone the development of the pustular eruption.

The other principal contribution to this Part is a remarkable case of globulinuria in a literary man, aged forty-seven, in which an enormous quantity of mixed proteids was daily passed in the urine, and crystals of globulin were deposited, usually only after standing for several weeks, but on two occasions within twenty-four hours after the urine was passed.

Besides the foregoing monographs, this fasciculus contains

notes of three new cases of Friedreich's ataxia and a description of a series of cases of insanity—melancholia, mania (hilarious and furious) and pantophobia—wrongly spelled *panaphobia* by Sir Alexander Morison in his collection of Portraits of the Insane—the term meaning delusive fear of every object and person.

There is a copious index, also a title page, table of contents, and list of illustrations.

We have much pleasure in congratulating Dr. Byrom Bramwell on the successful completion of the first volume of this important work, the second volume of which is promised to be issued in three instead of four fasciculi—to be published on September 1, 1892, January 1, 1893, and May 1, 1893.

Lectures on Diseases of the Digestive Organs. Vol. I. *Lectures on Digestion.* By Dr. C. A. EWALD, Professor in the University, and Physician to the Augusta Hospital, Berlin. Translated from the latest German Edition, by ROBERT SAUNDBY, M.D.; F.R.C.P. London: The New Sydenham Society. 1891. Pp. 214.

THIS volume contains twelve very complete and learned lectures on the physiology of digestion. The subject is treated in all its branches, and the latest views are mentioned.

We have studied this book very carefully, but regret to have to say that we are much disappointed with it. We found it ill-arranged, and exceedingly heavy reading. It is a very learned work; but it reminds us somewhat of a tangled forest, through which the traveller is at great pains to find his way.

In justice, however, to Professor Ewald, we must say that this obscurity is by no means altogether due to him. The book has been very badly translated. Dr. Saundby seems in many places to have taken as his model of style those keys to the classics in which the English equivalent of the original language is printed word for word. This idea has led him to give us some phrases which we can hardly call English at all. Thus, on page 5 we read:—"We have not now to examine closely the fate of nutriment which has passed into the juices and tissues of the body, *and the nearly related but not now in question subject* of tissue change, in which assuredly the inorganic matter plays a very important part; but we must learn the necessary preliminary steps, *that is*, the proceedings by which the organism

converts various food stuffs into absorbable material.' [The italics are ours.] This is a beautiful sentence; we have met with others in the work which are almost as attractive.

We wonder what is the meaning of the following description of the salivary glands:—"The blood-vessels ramify in a delicate network over the acini, and are separated by the alveolar wall from the lymph spaces, which are more or less full, according to the physiological condition of the gland, and the capillaries are thereby separated more or less from the wall of the acinus." To our ignorance it seems to say that the alveolar wall separates the blood-vessels from the lymph spaces, and the lymph spaces separate the capillaries from the wall of the acinus. Now, an acinus and an alveolus mean the same thing, and the description seems obscure.

We do not know whether we have to thank Prof. Ewald or Dr. Saundby for the eminently incorrect chemical notation and nomenclature. Hydrocyanic acid is represented by CONH. We read of amidocapronic acid; on page 76 we find the hitherto undescribed salt, Ca_3PO_4 ; and on p. 85 we find a hot saturated carbonate of baryta solution.

When a second edition comes to be published, we hope the translation may be re-written from beginning to end.

The Action of Water on Lead: being an Inquiry into the Cause and Mode of the Action and its Prevention. By JOHN HENRY GARRETT, M.D.; Diplomat in Public Health, Durham and Cambridge, &c. London: H. K. Lewis. 1891. Pp. 116.

THIS little book contains an account of the very careful experiments made by Dr. Garrett in order to elucidate the action of various kinds of water on lead—a subject which is by no means clearly understood. The experiments are described in detail, so that any chemist who is interested in the subject will be in a position to repeat them.

With regard to the prevention of the solution of lead in water, the author believes that the best method consists in the addition of some alkaline carbonate to the water, and suggests the use for this purpose of carbonate of lime, as he finds that a solution of this salt containing two grains in the gallon has no action on lead. The book is well worthy of the study of all interested in the subject.

PART III.

SPECIAL REPORTS.

REPORT ON THE PROGRESS OF SURGERY.

By R. GLASGOW PATTESON, M.B., Univ. Dubl.; Fellow and Member of the Court of Examiners, R.C.S.I.; Surgeon to St. Vincent's Hospital.

(Continued from page 416).

IV.—LIGATURE AND EXCISION OF INTERNAL JUGULAR VEIN.

This operation, first practised by Mr. Arbuthnot Lane, though previously recommended by Mr. Victor Horsley in cases of pyæmia due to septic thrombosis of the lateral sinus secondary to chronic disease of the middle ear or mastoid antrum, has now become so firmly established as a recognised surgical procedure that nothing need be said as to the grounds for its performance or the cases in which it is indicated. It is sufficient to say that in every case of chronic otitis media in which symptoms of pyæmia develop, as shown by repeated rigors and rises of temperature, to 105° or 107° F., combined with swelling and tenderness down along the anterior border of the sterno-mastoid muscle, the lateral sinus should, without hesitation, be explored, and the jugular vein ligatured and excised if necessary. Mr. Rushton Parker, in the *Liverpool Medico-Chirurgical Journal*, No. 22, Jan., 1892, has recorded two cases, one of which we quote at some length on account of the points of interest involved. The patient was twenty-five years of age. When a lad of fourteen he got kicked on the left side of the head, and had a bleeding from the ear, which gave rise to no permanent damage except a tendency to a slight discharge on catching cold. The present attack came on suddenly. There was "almost entire deafness of the left ear, from which foetid pus was issuing." There was no swelling or tenderness over the mastoid region, but there were "swelling and tenderness of the neck just below." Double optic neuritis, more marked on the right than on the left side, was present. Rigors were frequent; evening tem-

perature, 105°; in the morning, 102° F. His condition getting worse, it was decided to explore the jugular vein. "The vein was found firmly plugged from the base of the skull to below the junction with the facial trunk. Both veins were cut between two ligatures in their healthy parts, and their plugged portion detached from its bed, with a crop of swollen lymph glands covering the upper part of the jugular. The mastoid region was opened with a gouge and mallet behind the ear, emitting an excessively foetid odour, and revealing the interior of the lateral sinus occupied by green purulent lymph, and the tail end of a purple blood clot, thickening downwards. The detached jugular was opened, and found to be lined with gray membranous lymph, surrounding a firm plug of purple blood clot, partly softened and puriform within. This portion, about two inches or more in length, was cut away, leaving below the skull about an inch, the lymphic lining of which was scraped away, after which the passage upwards to the lateral sinus was well irrigated with perchloride of mercury solution. The sinus was partly scraped, and in probing upwards blood flowed freely, but was quickly stopped with a plug of antiseptic wax."^a Two days later the temperature rose again, the patient was put under chloroform and the wound opened up. The plug of wax was removed. "Behind the wax plug foetid pus had collected; and from the antrum a small quantity of cheesy material was removed, the small mastoid cells opened, and the way made free for washing throughout this dangerous annex to the middle ear." The patient made an uninterrupted recovery after this second operation. In the second case the patient—a boy aged seven—died three days after the operation, "with symptoms suggestive of meningitis." No account is given of a *post-mortem* examination.

The success of Mr. Parker's first case, in spite of great surgical dangers and the late period of the illness when the patient applied for treatment—after symptoms of pyæmia were fully developed—ought to convince the most sceptical of the splendid addition this procedure has made to surgical therapeutics, and to warn the timid and vacillating that on their heads will lie the death of those cases which are not sufficiently early entrusted to operation. Mr. Parker reproduces a useful diagram of Mr. Ballance's, showing the different

^a A better method of stopping the flow of blood from any of the cranial sinuses is by the simple invagination of the torn walls with gentle pressure, or if that is not possible, by the introduction of a few coiled strands of fine carbolised ligature gut. For the formula of this antiseptic wax, *vide supra*.

openings required for the various procedures and their relations; and most surgeons will, we think, agree with the preference which he expresses for the gouge over the obsolete trephine in dealing with the lateral sinus and its neighbourhood.

V.—ENUCLEATION IN THE TREATMENT OF GOÎTRE.

In the *Revue de Chirurgie*, Sept., 1891, Tom. XI., No. 9, M. Hache details a case in which he removed from the neck of a child, aged 13, a tumour as large as a goose egg, which, with the exception of a small cyst ruptured in extraction, was of a solid homogeneous character, presenting the features of a parenchymatous goître. The child made a rapid recovery, and six months later no enlargement of the thyroid could be felt. As regards the steps of the operation, a median vertical incision was made, and then passing down in the gap between the sterno-thyroid muscles the enlarged thyroid body was met with, at once presenting its normal colour and consistence. It was cautiously incised, and just below the surface from which it was separated by a thin layer of gland tissue lay the new growth. Enucleation and the remaining steps of the operation were mostly done with the fingers. The bleeding was slight, three pressure forceps being sufficient to check it, and no ligatures being required. In conclusion, M. Hache puts enucleation in the front rank of treatment—"Its efficacy, its extreme simplicity, and the entire absence of any anxiety as to the occurrence of cachexia strumipriva lead one to employ it without hesitation in place of trying interstitial injections of tincture of iodine—a method that, often uncertain [and we might add, generally *useless*], is always slow in dealing with tumours of such a size." It is a matter of congratulation that a method of treatment has been found which offers hopes of relieving sufferers from this condition without endangering their health, for it is now firmly established that extirpation has this unhappy sequel. The supervention of a condition allied to myxœdema is so real and so deterrent a danger in total removal of the thyroid body that we consider this operation justifiable in none but the extremest cases, where the mechanical effects of the growth are a constant and an uncontrollable menace to life.

In the same journal, *Revue de Chirurgie*, No. 3, Mars, 1892, Prof. A. Reverdin, of Geneva, publishes a paper on this subject. He gives in tabular form the results of 14 cases in which he has operated, with 1 fatal issue. Of these, 9 occurred in women. In

10, the tumour was on the right side; in 2, median; and in 2 on the left side. In 5 cases the enlargement was of a parenchymatous nature; in 6, cystic; and in 3, adenomatous. In 7 cases partial extirpation was practised; in 7, enucleation. The one death occurred in the former category, and in it collapse of the trachea from pressure-absorption rendered tracheotomy necessary a few hours after the operation, and four days later the patient sank from pulmonary congestion. M. Reverdin is by no means an advocate for wholesale operative measures. He has obtained good results from the employment of iodoform internally—one grain three times daily in a pill. The formula he employs is:—

R. Iodoforme - - 2 grammes.

Extrait d'absinthe Q. S. pour 30 pilules.

D. S. - - 3 pilules par jour.

This acts beneficially not only on those enlargements which occasionally follow uterine troubles or childbirth, but in cases where the gland is really degenerated, in true cases of goître. In all cases it appears to exert a direct influence on the healthy tissue of the gland—causing a diminution in size—rather than on the new growth itself. Though this at first sight seems rather an undesirable than a beneficial action, still no evil results have apparently followed. The indications for operative interference are thus stated by the author:—“*When iodoform, or any other treatment considered efficacious, has been fully tried, and there is, notwithstanding, an increase in the symptoms; gradual but continual enlargement of the gland, persistence or aggravation of the pain, and interference with the respiration; then operative intervention is indicated.*” To the question, “What form is this operative intervention to take?” Prof. Reverdin gives an unhesitating reply—In all cases where it is possible, *enucleation*; and “we must insist on the fact that the further we progress the more clearly we see that enucleation is the true method, and that its application is much easier than was at first sight apparent.” The thyroid tissue must be carefully laid bare, gradually and slowly incised layer by layer, and at a variable depth from the surface, according to the author, the tumour proper will be exposed to view. “*So long as you are doubtful you are not on the growth,*” which will be immediately recognised by its brownish-gray colour and its smoother surface. The incision must then be enlarged, and now, with the aid preferably of the finger, the tumour is rapidly enucleated out of the bed of the thyroid tissue in which it is lying,

and to the walls of which it is at times adherent. Rapidity is here the order of the day, for it is now the hæmorrhage, often alarming, begins, and till the growth is removed it cannot be mastered. Fatal results from this method M. Reverdin has not yet met with, and he strongly urges two other points in its favour—rapidity of performance and rapidity of healing. In his 7 cases of partial extirpation the average duration of the operation was 62 minutes, and of the healing 14 days; while in an equal number of enucleations the respective durations were—26 minutes, and less than 7 days. In conclusion, two axioms are formulated—1. The surgeon ought above all things to endeavour to perform enucleation; 2. If he succeeds he will cure his patients more surely and more rapidly, he will leave less visible traces of his handiwork, and above all he will save them from the misery of operative myxœdema.

VI.—TREATMENT OF SUPPURATIVE CHOLECYSTITIS.

In the *Berliner klin. Wochenschr.*, No. 11, 1892, H. Lindner records a case (one of four operations on the gall-bladder) which presents features of unusual surgical interest. The patient was a woman, twenty-eight years of age, who some time previously had suffered from perityphlitis, which had yielded to treatment. She now had a train of symptoms which pointed to suppuration of the gall-bladder. Accordingly an incision was made along the outer edge of the right rectus muscle, and the gall-bladder exposed. It was found enormously distended, and on incising it a large quantity of pus and a fair-sized calculus escaped. It was fixed to the abdominal wall, thoroughly washed out and drained. In a few days the discharge of pus gave place to a discharge of bile, and the patient made a speedy recovery, leaving the hospital at the end of five weeks. She still had a biliary fistula. Three months later she returned with the colic and other symptoms as bad as before. The fistula still discharged bile. On enlarging the opening the finger passed into a canal which extended upwards and backwards in the direction of the liver and ended in a *cul-de-sac*. Here a calculus was felt, separated from the canal by a membrane, which was apparently the thickened wall of the bladder. The liver and gall-bladder were exposed by an abdominal incision, and it was then found that the latter was divided into two compartments by a band of cicatricial tissue, and that the return of the trouble was caused by the impaction of the calculus

in the opening of communication between the two compartments. The stone was removed with great difficulty, but the patient made an excellent recovery with subsequent closure of the biliary fistula. The case illustrates the difficulties that beset diagnosis, and the care that should be exercised in exploring the bladder at the time of operation.

VII.—SURGICAL TREATMENT OF HEPATIC ABSCESS.

At the meeting of the Paris Société de Chirurgie, 13th Jan., 1892, M. Fontan brought forward two cases of abscess of the liver which he had treated by free incision and curetting, basing his mode of treatment on the grounds that incision and irrigation were insufficient to remove the shreds of gangrenous tissue which were often left adherent to the walls of the abscess cavity, and which, by keeping up prolonged suppuration, wore out the patient's strength before they became cast off. The scraping was gently done with a blunt curette, the left index finger acting as a guide, and was accompanied by only slight bleeding. In the discussion which followed, M. Pozzi remarked that he had seen this method practised in Egypt and Athens, and that it possessed the advantage of exposing, and causing the evacuation of, a second abscess which might have been overlooked. At the same time he did not consider this advantage to outweigh the risks of the procedure—hæmorrhage and the opening of the biliary ducts. M. Monod condemned the practice as not only dangerous but useless, and quoted cases in support of his views.

The second case is of much interest as bearing on the diagnosis of multiple abscesses, that bane of operating surgeons. A patient just returned from Cochin China presented all the symptoms of abscess of the liver. Three exploratory punctures gave no result; a final one, however, in the sixth costal interspace showed pus. A large incision was made, the rib resected, and free drainage provided. Marked improvement followed, but was of short duration. The temperature again became high, the diarrhœa became profuse, the cachexia became more marked, and six weeks after the operation the patient died. At the autopsy it was found that the abscess which had been incised and drained had completely collapsed, but that two others—one on the upper surface of the liver, and one on the lower—had escaped the knife. Hence the fatal result.

In this connection we may refer to a case published by Mr. F.

T. Heuston in the *British Medical Journal*, April 2nd, 1892, and brought by him before the Dublin Biological Club. The patient, twenty-seven years of age, had served as a clerk to the Imperial British East African Company for some months near Zanzibar. He was attacked by remittent fever, and invalided to Aden. After recruiting there he returned to Mombaza, only to again fall a prey to fever, and he was shortly afterwards invalided home. This was in September, 1890. He obtained employment at home, and for about a year was able to perform his duties, when he had to resign. In December, 1891, he came under observation. "His liver was greatly enlarged, giving rise to bulging out of the ribs and fulness in the epigastrium. He complained of dull aching pain in the hepatic and right iliac regions, also of tenderness below the costal arch, chiefly in the epigastric region." An operation was performed, and twenty ounces of pus first removed by the aspirator, followed by incision and the withdrawal of about three pints more. Rapid improvement followed, and the sac of the abscess seemed closing when a recurrence of the symptoms took place, and a swelling was detected to the left of the median line in the epigastrium. A further incision was made, the liver found adherent to the parietes, and an abscess containing a pint of pus opened. Improvement again followed the operation, but subsequently the patient's strength failed, and he died eight days after the operation. The autopsy showed marked contraction of the cavities which had been drained—in fact, they were fast approaching obliteration—but posteriorly in each lobe a large abscess was found "entirely out of reach of operative interference."

The question raised by these cases in which the liver is riddled with multiple abscesses is one of the gravest that can be placed before the surgeon for solution. One important fact seems to be now established by a sufficient number of observations, and that is, that a renewed aggravation of symptoms after the evacuation of a hepatic abscess points to increased activity in another focus of suppuration, probably roused into increased action by the reduction of general tension following the operation, and requiring immediate and further operative interference. Judged in the light of these and similar cases, it would appear as if M. Fontan's proposition of curetting the interior of liver abscesses might be a valuable aid to the diagnosis of multiple abscesses, and we think if such a measure were gently done with the flushing gouges

introduced by Mr. Barker for the treatment of psoas abscess, used with a continuous stream of hot water, that the risk of hæmorrhage at all likely to prove fatal would be reduced to zero. Further, now that experience has taught us that the failures in the majority of these cases are due to undetected abscesses, we fail to see why the methods adopted in dealing with other organs should not be adopted here. Is the liver more sacred than the kidney or the brain? Yet we probe these organs with trocar and grooved needle without ill result: why not the liver? Is the liver the last place of the "microcosm of man" of which we must speak with bated breath, owning that within it dwells a veritable fetish, and that it alone remains holy ground?

VIII.—INTERMITTENT HYDRONEPHROSIS.

Messieurs Terrier and Baudouin have published in successive numbers of the *Revue de Chirurgie* (September, October, and December, 1891) a series of articles on this interesting pathological condition and its surgical treatment, which, taken together, constitute a complete monograph on a subject hitherto but slightly touched on in any of the larger and recognised authorities. A careful analysis in tabular form of 83 cases—all as yet recorded—forms the basis of their communication. As the result of these studies the authors have arrived at certain very definite conclusions, some of which we here quote as they are of interest as well as of practical bearing. This form of hydronephrosis—intermittent—only recognised in recent years, is much more common than is generally supposed, and is often the earlier stage of a permanent condition. This clinical variety may be produced by many various conditions: in by far the largest number it is a complication of *renal displacement*. It is found more frequently in women, and has a predilection for the right side in the female and for the left in the male. It is sometimes due to a calculus impacted in the pelvis of the ureter, or may be the result of compression or of temporary obliteration of the lower portion of the ureter. In a few cases it is congenital. The method of its production in cases of floating kidney has been studied in experiments and in the facts of morbid anatomy. When displacement of the kidney occurs, a kinking of the ureter, with or without torsion, follows, accompanied by a temporary arrest of the evacuation of the urine and gradual formation of a hydronephrotic pouch, which empties itself when the kidney returns to its normal position. This

interference with the circulation leads to inflammatory changes in the neighbourhood of the pelvis or in the mucous membrane of the pelvis itself, as a result of which fibrous bands of adhesions may form between the sac and the upper part of the ureter, and may end by converting an intermittent into a permanent hydronephrosis. These alternating periods of fulness and emptiness of the pelvis, consequent upon the transitory obliteration of the ureter, manifest themselves clinically by *paroxysms of pain*, which occurring generally every month, and sometimes oftener, and following on a period of health more or less perfect, are almost characteristic of the affection. These paroxysms present three phases—onset, climax, and terminal phase—which are characterised by pain, always severe and sometimes almost intolerable, and by the coincident appearance of a tumour—fluid but rarely giving rise to fluctuation—which is generally seated in the right loin, and is synchronous with a marked diminution in the quantity of urine passed. These are the results of the sudden kinking of the ureter which follows the displacement of a floating kidney. Each attack lasts for some hours, coming to a sudden termination when the kidney regains its normal position. The pain and swelling disappear, and there is a copious evacuation of urine, consequent on the emptying of the pelvis. Those cases which have been hitherto described as instances of *acute strangulation of floating kidneys* are in reality only an early stage of the condition of intermittent hydronephrosis.

In many of these cases the question of treatment does not arise. The attack lasts a day or two, and with the evacuation of the pelvic accumulation of urine all trouble ceases, and months of absolute comfort may succeed. But where the pain is excessive in degree, and the periods of intermission short, so that the patient is being rapidly worn out by the constant strain and loss of repose, then the question of operative treatment becomes of paramount importance. Moreover, the danger of a septic infection of the retained fluid, with the consequences of an infective pyelonephritis, must always be present in the mind of the surgeon, and adds enormously to the gravity of the case. Hence, in early stages, *nephropexy*—or the fixation of the kidney to the abdominal wall—offers the best chance of success. But when the tumour is large and increasing in size more radical measures are needed, and especially if both kidneys are affected, the most promising measure is incision and drainage of the pelvis on the side which is

most engaged, with the view of establishing a *pelvic fistula*. But in other cases, when one kidney still remains sound, it is better to have immediate recourse to *nephrectomy*. It entails less suffering on the patient, and holds out better hopes of success, than the establishing of a urinary fistula, as many of these cases have required the subsequent performance of a secondary nephrectomy under conditions much less favourable for the surgeon and for the patient.

As regards the operation of *nephropexy*—the name preferred by the authors instead of *nephrorraphy*, that given to it by its originator, Hahn—the kidney is exposed by a lumbar incision in the usual way, and fixed from above downwards by sutures of silk, which penetrate into the kidney-substance as well as the capsule, and are then passed through the aponeurosis of the quadratus lumborum. Mr. Morris, we may here remark, uses kangaroo tendon, and Mr. Treves silkworm-gut sutures, as Dr. Newman found the absorption of catgut to be more rapid in the kidney than in any of the other tissues. The authors entirely condemn the palliative treatment by suspensory bandages and trusses, not only as being useless, even when well applied, which is seldom, but also as allowing the condition to progressively develop, thus adding to the difficulties of future surgical interference. Aspiration of the tumour or the establishment of a lumbar urinary fistula are equally condemned; but a urinary fistula may be, in certain cases, established by lateral laparotomy, incision of the pelvis, and stitching of its walls to the abdominal opening after the manner of dealing with hydatid cysts. This incision allows the extirpation of the kidney at the same time if found necessary.

IX.—SPINAL SURGERY.

The attention of surgeons has recently been drawn largely in this direction, and the brilliant results which have, in a few cases, been already attained seem to hold out the hope that, with larger experience and improved methods, the spinal canal and its contents will come within the legitimate range of practical surgery. In an important paper in the *Revue de Chirurgie*, T. XI., No. 7, 1891, M. Chipault deals with some new facts in connection with the surgery of Pott's caries, his first case being an example of a further adaptation of Mr. Treves' operation for lumbar abscess by direct incision and drainage. In this case—a boy aged nine years—no abscess could be detected, but there was severe sciatic

pain in the left side, considerable lordosis from contracture of the sacro-lumbar muscles, pain on pressing over the left transverse processes of the three lower lumbar vertebræ, and also marked tenderness on palpation of their bodies through the flaccid and emaciated abdominal wall. The diagnosis was tubercular caries of the bodies of the vertebræ with extension on the left side compressing the roots of the sciatic nerve. At the operation large fungous masses of tubercular tissue were found extending from the diseased bodies and compressing the nerves at the foramina of exit. These and the softened parts of the bodies were curetted away carefully, and in the anterior part of the cavity thus left the aorta could be felt distinctly pulsating. The operation was almost bloodless. A drain was passed across the vertebral cavity, coming out at the most dependent part of the wound. It was removed at the first dressing, and the wound was found completely healed at the second (the dates are not given). On the 15th day the pain and lumbar contracture had completely disappeared. In this case, to which we have referred at some length on account of its intrinsic interest, the spinal canal was not opened, but in the following cases M. Chipault has deliberately adopted a method for the treatment of ante-medullary lesions by trephining and drainage through the vertebral canal. In his three cases the patients were the victims of Pott's disease, and were paraplegic. The first, a boy, aged nine, who had suffered for some months from caries of the upper dorsal spine, suddenly became paralysed after falling down a staircase. He was treated by suspension and jackets, but without benefit. There was incontinence of urine but not of fæces; there was no cystitis. After a short interval the following operation was performed. An incision 10 c.m. long was made over the transverse processes of the 2nd, 3rd, 4th, 5th, and 6th dorsal vertebræ, the periosteum was reflected outwards, and the arches resected. The dura mater was found healthy, but at the 4th vertebra there was found a projection and a compression so marked that the spinal cord seemed to be altogether wanting. Numerous fungous projections into the canal were scraped away, a large abscess was opened, and the ridge of bone projecting was completely removed, and the cavities of the diseased vertebræ as far as possible cleaned out. The destruction of the bodies was enormous, and the removal of the disease certainly incomplete. Notwithstanding this the wound healed, and the progress was excellent for some time, but a month after the operation the

child succumbed to an attack of broncho-pneumonia. At the autopsy the wound was found firmly closed by a mass of osteo-fibrous tissue, evidently developed from the periosteum that had been preserved; but a large cold abscess in connection with other diseased vertebræ was found. In the second case, a girl aged four and a half years, the same region of the spine was affected, but not so extensively. The paraplegia was one produced by a gradually increasing pressure, and not one suddenly developed by fracture or displacement. A similar but less extensive operation was performed. Numerous outlying fungosities were scraped away, and the principal focus of infection in the posterior part of the body of the 4th dorsal vertebra was thoroughly evacuated and cleansed. A drain was inserted into it and brought out across the vertebral canal between the 4th and 5th dorsal nerves; the muscles cut were sutured, then the skin, and the whole wound irrigated until the boric solution returned clear. An immobile dressing was applied. An excellent recovery followed. On the second day motion returned in the toes, and on the fifth day she could lift the heel from the bed. In the third case, a child whose age is not given, a similar procedure gave similarly good results. In six hours after the operation the child lifted its two heels together off the bed to any height, and the paralytic club-feet had disappeared; and the following day the exaggeration of the knee reflexes was gone. So far it has continued to progress favourably.

Striking as these cases undoubtedly are, though too little time has been allowed to elapse after the operations to formulate any decisive judgment on the permanency of their results, still M. Chipault must be congratulated on the skill and courage with which he has tackled a class of hopeless cases, and one too often allowed, hitherto, to glide unheeded from suffering to suffering till death brings a happy release. The conclusions which the author formulates from his experience are as follows:—

1. The operation is anatomically possible; it requires skill, but it is easy to avoid injury of the meninges or of the spinal nerve roots. Drainage and irrigation of the diseased centres through the vertebral canal do not give rise to even transitory disturbances of the medulla.
2. By direct treatment of the tubercular focus we may hope to obtain a result not merely palliative but curative—a result impossible with the methods hitherto employed.

X.—SPASMODIC TORTICOLLIS.

Dr. Charles A. Powers has recorded (*New York Medical Journal*, March 5, 1892), a case in which he performed the operation recommended by Keen in cases of obstinate spasmodic wryneck, in which excision of portion of the spinal accessory nerve has failed to give relief—viz., resection of the posterior branches of the first three cervical nerves. This procedure was independently practised and advised by Mr. Noble Smith, and his case, in these countries, together with those of Dr. Keen and the author in America, constitute, according to Dr. Powers, the only three cases as yet recorded. Keen's patient was a woman, fifty-four years of age, who had suffered for some years from spasmodic movements of the head towards the left shoulder. In 1886, when the affection had persisted for over two years, Dr. Ashurst excised four inches (?) of the spinal accessory nerve; the spasms disappeared for a week and then returned as before. Some time after this the patient came into Keen's hands, and excision of portions of the nerves supplying the posterior rotators was practised, with the result that though a slight amount of spasm returned the patient was much benefited by the operation. In Noble Smith's case, a lady, aged forty-one, had suffered for sixteen years from severe spasmodic wryneck, the result of a strain of the neck. Stretching, and subsequently resection, of the spinal accessory nerve were performed; but, the spasms continuing, a month later, in May, 1890, parts of the posterior divisions of the upper cervical nerves, as low down as the fourth, were excised. Recovery from the operation was complete, the spasms ceased, and eleven months afterwards there had been no recurrence.^a Dr. Powers' patient was a man of muscular build, thirty-seven years of age, in whom the spasms began two and a-half years previously, and had been increasing in severity ever since. Only the posterior rotators appeared to be affected; "the spasmodic movement seemed to be a rotation of the atlas upon the axis;" the trapezius and sternomastoid were apparently not implicated. Excision of parts of the posterior divisions of the upper three cervical nerves was performed, with the result that the patient is now free from pain, which before was intense; "the deformity is but slight, all movements of the head are quite free, there has been no return

^a For a fuller account of this case, and description of the steps of the operation, see "Spasmodic Wryneck and other Spasmodic Movements of the Head, Face, and Neck." By Noble Smith, F.R.C.S., Ed. London: Smith, Elder, & Co., 1891.

of the spasms, and he is able to attend to his daily work which was impossible before the operation." The author discusses the various steps of the operation, the relative value of the transverse incision adopted by Keen and followed by him, and the vertical incision of Smith, and attributes the better result obtained in Smith's case to the inclusion of the fourth nerve in the resection. This he regards as an advisable step in future operations. From his study of the subject he concludes: "That in spasmodic affection of the muscles supplied by the posterior branches of the upper cervical nerves resection of those nerves is a procedure, practically devoid of danger, which offers many chances for marked amelioration and a fair prospect of permanent cure."

XI.—TENOTOMY BY A NEW METHOD.

Dr. W. W. Keen, rightly regarding the older method of subcutaneous operation as a relic of pre-antiseptic days, has devised a new method of open operation, which he practised successfully in a case of contracture of the flexors of the fingers following hemiplegia. Subcutaneous section was always more or less of a haphazard operation, and the length to be added to the shortened tendon could never be accurately measured. Now the necessity for operating in the dark and avoiding the entrance of air into the wound are things of the past, and the surgeon can accurately measure the required length he wishes to add to the shortened tendon. A free incision is made; the contracted tendon is fully exposed, and is then divided along its middle for a little more than half the distance it is intended to lengthen it. The halves of the split tendon are now divided above and below on opposite sides—*e.g.*, in the forearm. If the ulnar side of the split tendon is cut above, the radial side must be cut below. In this way the two halves are allowed to glide the one over the other for the required distance and are then united by transverse sutures. The simplicity and wide applicability of this operation will at once recommend it to surgeons, and another of the once useful subcutaneous methods of operation will go the way of so many other short-lived surgical triumphs.

XII.—TUBERCULOSIS OF THE URINARY BLADDER.

In an article on the "Electric Illumination of the Bladder" (*Medical Annual*, 1892, p. 118) Mr. Henry Fenwick sums up the results obtained up to the present by the use of the cystoscope.

Among the subjects referred to in this most interesting review, which is illustrated by some excellent chromographs, is that of tuberculosis, and though admitting that "there is no disease of the urinary organs capable of such accurate mimicry as tuberculosis," and that "there is hardly a common disease of the tract that it does not simulate at one time or other of its progress;" yet Mr. Fenwick believes that the diagnosis may be accurately made, most stress being laid on the family history and the presence of the bacillus tuberculosis. In a case here illustrated by a figure "the symptoms were only of a few weeks' duration, and were very characteristic of *stone* in the bladder." Electric endoscopy showed ulceration. "The ulcers were small, punched out, and had vivid red margins; they were situated on a dull red base of infiltrated mucous membrane. The patient rapidly became phthisical." We cannot, however, agree with the distinction Mr. Fenwick apparently draws between "tubercular" and "scrofulous" ulcers (p. 123). *Post-mortem* evidence shows the identity of the processes in the bladder as elsewhere. For what he calls "catarrhal and scrofulotic ulcers" the author recommends injections of lactic acid, one-half to three per cent., given daily, and scraping; but no description of the latter procedure, nor reference to cases, is given, important as it undoubtedly is to bring within the range of surgical progress an affection so intrinsically painful, and so liable if left to itself to lead to a lethal issue. Hence we hail with pleasure a paper bearing on this subject by Dr. Lewis S. Pilcher, of Brooklyn, entitled "Notes on Tuberculosis of the Urinary Bladder, and the value of Suprapubic Cystotomy in its Treatment" (*New York Medical Journal*, March 5, 1892). Dr. Pilcher gives notes of five cases, in four of which this operation was performed. From an analysis of the cases we gather that the leading symptoms of tubercular ulceration in the bladder are—frequency of micturition, generally associated with pain and straining; hæmaturia, in all cases except one, in which there was an ischio-rectal abscess and the urine was full of pus; general irritability of the bladder; and frequently the passage of shreds of tissue in the urine. In all cases epithelial *débris* and pus cells occur in large quantity. As regards the diagnosis of primary disease, stress is laid on the observations of Rosving, who found tubercle bacilli in the urine in three out of thirty cases of cystitis examined by him, and the first place among diagnostic tests is, of course, given to the discovery of the bacillus. Of the

cystoscope Dr. Pilcher, rather unfairly we think, speaks in a very slighting way. "If, by rare chance, when it is introduced, the fluid contents of the bladder are clear enough to enable its mirror to reflect any portion of the bladder wall," yet it can reveal but imperfectly and uncertainly the degenerative and inflammatory changes that may be present; while direct ocular inspection and palpation through a dilated suprapubic opening still need the confirmation of the bacteriologist in order to establish beyond question the opinions they may have suggested." What "ocular inspection" revealed in one case is thus described:—"An area of mucous membrane as large as a silver dollar, intensely congested, velvety in appearance, raised somewhat above the surface of the surrounding normal mucous membrane, as if by infiltration of the submucous tissue, and bleeding freely when touched." This is the "*tubercular ulcer*," and may be contrasted in its features with that described by Mr. Fenwick above, not as being contradictory, but as illustrating most probably two phases of the one condition—the "punched out" ulcer of the latter being a later stage of the infiltrated patch "somewhat raised above the surrounding mucous membrane" to which Dr. Pilcher refers.

In the treatment of these, unless in an early stage, scraping can avail but little, as the infiltration in many cases rapidly becomes so deep that no instrument dare follow; and Dr. Pilcher questions "whether in any of these cases very substantial advantage is to be hoped for by attempts at special topical anti-tubercular treatment." "The most that can be hoped for from treatment is to prevent the collection of urine in the bladder, to keep the bladder at rest, and to mollify the effects of the existing infection by relieving pain, removing *débris* and irritating secretions, preventing muscular spasm, and restraining inflammation," and that is surely a good deal to attain in a hopeless class of cases. So far the results obtained cannot be said to be more than promising. Of the four cases operated on very marked benefit was derived in two—one in fact practically cured—"while in the other two no benefit, but on the whole, decided disadvantage was the result." Dr. Pilcher closes his most interesting and suggestive paper by considering two questions:—"1. How early in a case of bladder tuberculosis is a suprapubic section desirable? 2. How long is it desirable to maintain the suprapubic opening patent?" The answer to the first depends upon the amount of cystitis, of pain, and of general distress which are present.

Nothing is gained by delay; and physiological rest should be obtained for the diseased organ before "the general health is sapped by the local suffering, the extension of the disease, and the absorption of deleterious circumstances into the circulation." The second question will be answered by the amount of recovery made, or of comfort obtained, by the patient after the operation. In all cases many months of suprapubic drainage will be required; in many others the issue of the case will save the surgeon the trouble of assigning any limit to its duration.

XIII.—TREATMENT OF TUBERCULOSIS OF BONES AND JOINTS.

In an elaborate and exhaustive paper published in the *Annals of Surgery* (Vol. XV., No. 1, January, 1892), Dr. N. Senn reviews the method of treatment of tubercular affections of bones and joints by the so-called parenchymatous and intra-articular injections, and shows such a favourable series of results that many surgeons will be inclined to give the method a full trial. The various remedies that have from time to time been suggested are passed under review, and the preference is finally given to iodoform, used as a 10 per cent. emulsion in glycerin or olive oil.^a The ethereal solution of iodoform should never be employed as it may give rise to local troubles—necrosis, and to general toxic symptoms. Dr. Senn attributes the beneficial effects of these injections directly to their anti-bacillary qualities. The injections ought to be carried out with intervals of from one to two weeks until the indications point to a cessation of specific and a return of healthy inflammation. How this is to be ascertained is thus formulated:—"In tubercular empyæma (*sic*) of joints and tubercular abscesses gradual diminution of the contents of the joint or abscess at each successive tapping, lessening of the solid contents of the fluid, and increase of its viscosity are the conditions which indicate unerringly that the injections are proving useful, and that in all probability a cure will result from their further use." The strictest antiseptic precautions must be observed during the processes of tapping and injecting, and where a large abscess cavity has to be evacuated repeated irrigation should be employed before the injection of the emulsion. The author strongly urges the employment of "parenchymatous and intra-articular injections

^a We can recommend as a still more valuable injection-material a solution of iodoform in "paroleine," an odourless and absorbent petroleum derivative recently introduced by Messrs. Burroughs, Wellcome, & Co.

of safe anti-bacillary substances in all subcutaneous tubercular lesions of bones and joints accessible to this treatment." Of course amputation and resection are not to become forgotten arts in the surgery of joint tuberculosis in the future; but even when recourse to these is necessary Dr. Senn finds that "preliminary treatment by iodoform injections into the affected joint constitutes a valuable preparatory treatment to the operation, and adds to the certainty of a favourable result." Next to iodoform in efficacy the author lays stress on the balsam of Peru. A brief abstract of a case will show more clearly the method employed. It is one of the ten recorded by Dr. Senn in support of the views advanced. The subject was a boy aged seventeen. Diagnosis:—Tubercular spondylitis of upper dorsal vertebræ; formation of large lumbar abscess, probably communicating with the primary osseous lesion. The abscess was tapped in the lumbar region immediately below the last rib, and *six pints* of characteristic tubercular pus were evacuated. The cavity was washed out repeatedly with boric acid solution until the fluid returned perfectly clear. An ounce of iodoform emulsion was now injected and antiseptic dressings applied. Between June 18 and August 5, tapping, irrigation, and subsequent injection, as described above, were four times performed. At each tapping the quantity of fluid was less, so that on the last occasion not more than *four ounces* of a viscid opaque fluid were removed. Since then the case has progressed favourably; the abscess has not refilled, and the general condition of the patient has undergone marked improvement. This case is extremely hopeful; most surgeons being familiar with the dreary chronicity of psoas and lumbar abscesses, so that such a result in less than two months of treatment is one that many will be anxious to follow. In view of this we may append one of the conclusions to which Dr. Senn's experience has led him:—"In open tubercular affections of joints, incision, scraping, disinfection, iodoformization, iodoform gauze tampon, suturing, and subsequent injections of iodoform emulsion as advised by Billroth yield excellent results, and should be employed in all cases in which a more formidable operation can be avoided."

Further evidence in favour of Dr. Senn's method comes to us from France, and with a weight of authority which cannot be overlooked. At the meeting of the Congress for the Study of Tuberculosis (*Revue de Chirurgie*, No. 9, 1891), M. Verneuil brought forward nine cases illustrative of the results obtained in surgical tubercu-

losis by subcutaneous injection of *iodoformed ether*. In two cases of Pott's disease—one an enormous iliac abscess, the other a psoas abscess pointing in the thigh—rapid cure had followed the evacuation of the pus and the introduction of the iodoform, although in the former case some drops of ether had escaped into the abdominal cavity and caused peritonitis in a slight degree; and the cure had now persisted for some years. In two cases of hip-disease which required resection and subsequent scraping of numerous fistulæ which recurred, injection of iodoform caused a rapid cure. In a case of white swelling of the knee in which, on account of the rapidity of its progress, excision of the joint was considered advisable, rest and iodoform injections caused rapid closing of the sinuses and such amelioration of the symptoms that the patient, a lad of sixteen, can now walk about in a fixed apparatus, the local and general condition being perfect. Other cases in which good results followed were—tubercular ulceration of the tongue, white swelling of foot, and an empyema in which a fistula persisted after the resection of portions of several ribs. M. Verneuil insisted on the necessity for the continuance of the iodoform treatment for some time after apparent cure in doses of 5 to 10 centigrammes, and drew attention to the point in using an ethereal solution that the canula should be retained in place for some little time to allow the escape of the vaporised ether and prevent undue distension of the sac. At the same meeting M. Redard drew attention to the good results he had obtained by the injection of iodoformed oil—10 parts in 100—which he prefers to ether. Out of 30 cases—26, tuberculosis of the bones—25 cures were noted.

These striking results in America and on the Continent ought to draw more closely the attention of surgeons at home to this method of treatment, which appears, at any rate, free from all risk.

XIV.—GASTROSTOMY.

In an admirable paper read before the Chicago Medical Society, and published in the *Medical Recorder*, January, 1892, Dr. Senn reviews the present position of this operation, basing his remarks on three cases of his own. As the result of an analysis of all the cases recorded (the operation only dates from 1849; Sédillot's case and many of the earlier cases belong to the pre-antiseptic era), the mortality from the operation is only about 25 per cent.—certainly a good record for such a grave procedure; one, moreover, that is generally, and wrongly, only resorted to when the

patient's powers have sunk below rallying point. Now that the question of the relation of physician and operating surgeon in cases of this class is being so earnestly debated, perhaps we may be allowed here to emphasise the remarks with which Dr. Senn directs attention to the necessity of early intervention if a prolongation of life is to be hoped for. "The bad showing of the operation should only remind us not to postpone it until the patient has not sufficient recuperative powers left to rally from its immediate effects, and to secure a satisfactory repair at the site of operation. . . . The operation should never be delayed until the patient is on the verge of starvation." The various methods of performing the operation are discussed, and Fenger's incision is rightly, we believe, discarded, the incision at his site causing too great a drag on newly-formed adhesions, and accounting for many of the failures by rupture of the union after withdrawal of the mechanical supports employed. "The upper central part of the left rectus and the eighth intercostal space between the cartilages of the ribs are the most desirable points for the formation of the gastric fistula." The former is the incision advised by Von Hacker and practised by him in fifteen cases, fourteen of which were successful so far as the operation was concerned. The latter is the ingenious suggestion of Hahn (vide *Berl. med. Wochenschr.*, No. 14, 1890), successfully adopted on eight occasions. In discussing the question of difficulty in finding the stomach, owing to the atrophy and diminution in volume of the organ which are so often present in cases of œsophageal obstruction, Dr. Senn refers to the mistakes that have been made, such as opening the duodenum and transverse colon, and recommends the distension of the stomach by gas after his method of intestinal inflation now so widely practised. But here he seems to forget the usual impermeability of the stricture, whether cicatricial or neoplastic, at the period when operative measures are resorted to, and the difficulty, not to say danger, of stopping in the middle of an operation of such serious nature to attempt catheterisation of the stomach. This seems a fatal objection to a proposal which otherwise would solve an anxious problem. Dr. Senn is in favour of a two-step operation. In every case where delay is possible the fistula should not be established until the third or fifth day when adhesion will be firm enough to prevent gastric extravasation into the peritoneal sac. Meanwhile the patient must be supported by rectal feeding—four ounces every four or five hours. A full description is given

of Witzel's ingenious suggestion for tunnelling—or rather forming an artificial tunnel in—the stomach wall to prevent the leakage of the gastric contents and its concomitant troubles. Witzel has employed this device in two cases with good result (*Centralbl. f. Chir.*, No. 32, 1891).

Perhaps the most important question discussed by Dr. Senn is the performance of gastrostomy with a twofold object in view—the immediate saving of life in cases of cicatricial contraction of the gullet, and the subsequent “retrograde dilatation” of the stricture through the opening so obtained. This operation has already been done with a certain amount of success. In summing up the case for operation the author arrives at the following important, among other, conclusions:—“Gastrostomy for malignant obstruction on the proximal side of the stomach, if performed at a time when the patient is sufficiently strong to survive the immediate effects of the operation, is a comparatively safe procedure, and adds from a few weeks to six or eight months to the patient's life.” “Leakage from the fistula can be prevented most effectually by making the opening in the stomach small, by the use of an inflatable double rubber bulb through which the feeding tube reaches the stomach, or by making an oblique tunnel in the anterior wall of the stomach as devised and practised with success by Witzel.” “Mastication of food, as a preliminary step to its introduction into the stomach, satisfies, at least in part, the sense of hunger, which is not always accomplished even by liberal exclusive gastric feeding through the fistula.”

The essay it will be seen embraces all the most recent work on the subject and is worthy of careful attention. The subject is one that has always been of much interest to the writer since having had the opportunity of seeing Mr. Sydney Jones' case alluded to by Dr. Senn in which the patient survived for forty days. If that case taught any lesson it was this—delay is fatal both to the patient and to the operation. Once again let it be urged that in early resort lies the only chance of success. Not only is the recovery from the operation more certainly assured, but much is gained by early removal of the mechanical irritation of food—a point not touched on by Dr. Senn, but one of the greatest importance, especially in the delaying of the evolution of malignant growths. Otherwise surgery can offer no relief to humanity in the passage of that most terrible of all paths that lead to the valley of the shadow of death—the path of starvation.

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

CLINICAL RECORDS.

A Case of Protracted Enteric Fever. By R. J. KINKEAD, B.A., M.D., Univ. Dubl.; Professor of Obstetric Medicine and Lecturer in Forensic Medicine in Queen's College, Galway.

THREE hundred years ago (1591) Forestus described the disease, which we now call enteric fever, under the name *Febris lenta*, from its long duration. In 1729 Strother, in his "Very Remarkable History of a Spotted Fever," spoke of the "Slow" or "Lent Fever," which could have been none other than enteric fever. Protracted as the duration of this fever not infrequently is, the following case is probably without a parallel. The patient was admitted to hospital after five weeks' illness, and was discharged convalescent after a sojourn in hospital extending over 18 weeks and 5 days.

CASE.—Mrs. X., aged fifty-two, mother of a large family, a very stout woman, was admitted to hospital on Oct. 2, 1891, and discharged on Feb. 9, 1892. Five weeks before admission diarrhœa began, notwithstanding which she went to Dublin, remained there three or four days, came home, and had no medical advice or treatment for three weeks. She was then seen, prescribed for, and directed to remain in bed; but diarrhœa getting a little better she got up, went out, and continued at her household duties until Oct. 1, when diarrhœa still persisting, and feeling weak, she again sought advice.

All the symptoms of typhoid fever were well marked; numerous spots, abdomen tympanitic, pain, tenderness, and gurgling in right iliac fossa; temperature, $101\cdot6^{\circ}$, rising to 103° in evening; stools, "pea-soup;" the urine scanty, of low specific gravity, and albuminous. Abdominal distension and pain increased, vomiting followed, and on Oct. 8 the respirations became slightly hurried. On morning of 9th there was dulness on percussion, and fine crepitus over base of left lung, up to within a couple of fingers' breadth of angle of scapula, extending

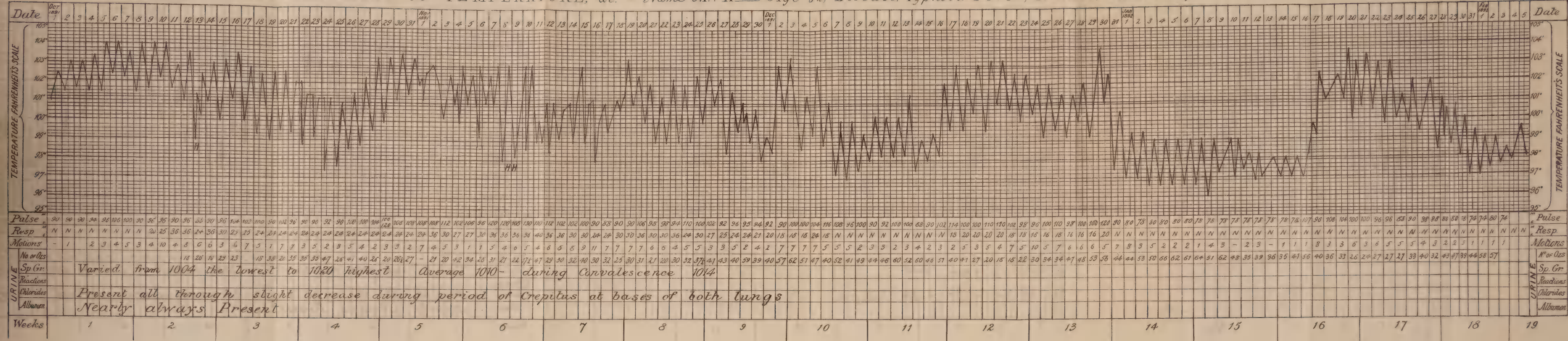
round to sub-mammary region ; the pulse was weak and compressible ; the first cardiac sound short, but fairly good, the second sound accented ; mind clear, but patient very fretful and nervous, frequently crying. The urine steadily diminished in quantity ; the albumen, the congestion of lungs, the distension of the abdomen as steadily increased ; the tongue dry and dark brown, the face puffy and flushed, when on the 13th sharp hæmorrhage from the bowels occurred. On that day, and on the following, she had six stools, at first nearly all liquid blood, with large clots, gradually getting more fæcal and less bloody, until there was no blood in last couple of stools on the 14th.

Although she was very much weakened by it, yet on the whole the hæmorrhage proved beneficial. The kidneys were distinctly relieved ; the quantity of urine increased ; the albumen diminished to a trace, and the specific gravity rose. At the same time the lung symptoms improved, dulness and crepitus diminished, respirations became deeper and slower, the temperature steadily fell, the abdomen was less distended, and the patient progressed fairly well until Oct. 27—then she became worse than before. Both lungs were now engaged, dulness and crepitus at both bases ; respirations 36 to 40 per minute ; pulse rapid, weak, irregular ; cardiac sounds short and weak, with a peculiar, musical, high-pitched bruit at apex ; frequent liquid stools, sometimes passed under ; urine scanty, albuminous, of low specific gravity ; and occasionally loss of bladder power requiring use of catheter.

On Nov. 8—38 days after admission, 26 days after former bleeding—a second attack of hæmorrhage from bowels occurred, and very nearly carried off the patient ; it was decidedly more profuse, lasted longer, than the first, and reduced her to a profoundly prostrate condition. However, she rallied, and the record for Nov. 9 to Dec. 30 shows a steady continuance of fever, with apparently abortive attempts to defervesce, most disheartening to deal with. If lungs improved the kidneys worked worse, or the abdominal symptoms became aggravated ; if abdominal distension declined, diarrhœa lessened, and tenderness not so marked, she would either take to vomiting, or the lung mischief go ahead, and urine become scanty ; if kidneys acted better, either lungs or abdomen gave trouble, and sometimes all together got bad ; the pulse failed, and the patient's condition appeared hopeless, while all through fresh spots kept coming out as the old ones faded away. On Dec. 24 the stools began to thicken, and between 30th and 31st the temperature fell from 103.8° to 97.2° .

The fall in temperature was followed by an all-round improvement. The lungs cleared up, and respiration became normal ; urine became abundant, and free from albumen ; the pulse fell in rate, and became fuller in volume ; tongue became clean and moist ; abdominal distension disappeared, and stools became solid.

CLINICAL CHART OF TEMPERATURE, &c. — Name M^{rs} X — Age 52, Disease Typhoid Fever, Result, Recovery.



This happy condition continued for 16 days, when without any apparent cause, without any error in diet, without any worry of any kind, or mental anxiety to account for it, and without any warning whatever, the temperature rapidly rose from 97° to 102.4° —and except the lung mischief all the typhoid symptoms, spots included, returned. This new bout of fever lasted 14 days, terminating by a gradual fall of temperature.

She was discharged convalescent on Feb. 9, 1892, having been in hospital 18 weeks and 5 days. At this date, although the morning temperature had been but 9 days below the normal line, and the evening temperature only 5 days at normal range, it was deemed wise—considering the length of time she had been in a small hospital—to remove her from an atmosphere which must have been saturated with typhoid emanations. Although I learn from Dr. Brereton, who took charge of her during convalescence, that occasionally there have been rises of temperature of transient duration, she has steadily progressed on the road to health, except for an attack of bleeding from the throat, which occurred suddenly without any inflammation or pain, was decidedly profuse in quantity, and from behind and below the left tonsil. She woke up on the morning of March 11 spitting blood; the hæmorrhage continued till 2 a.m. on the 12th, and we controlled it with difficulty by small doses of ergot, vigorous swabbing with liq. ferri perchl., and the application of ice.

During the fever dietary and stimulation were attended with grave difficulties. At times digestive power and absorption seemed gone altogether; milk, even when diluted with soda-water or lime-water, passed in curds in the alvine evacuations; beaten-up yoke of egg passed off unchanged. On one occasion when sleep failed, and diarrhœa was profuse, opium and belladonna pills were administered; in a few hours they appeared in the stools as perfect as when swallowed. If alcohol was withheld the heart immediately failed; on the other hand, it seemed when pushed, so as to keep the heart going, to bother the kidneys. The administration of a couple of ounces of gin in the day, along with whisky or champagne, solved the difficulty. Milk evidently disagreeing, whey was tried, but patient soon tired of it, and stomach kicked against it; then bread jelly was given, which she relished; it was well digested, and proved most satisfactory.

Quinine was well borne, but seemed absolutely inert—10 gr. doses, repeated in an hour, produced neither headache nor singing in the ears, nor deafness, nor did it affect the temperature. The only medicine which lowered temperature was Warburg's tincture in full doses, and wherever on the chart a high temperature is seen, followed by a sharp drop, and falls and rises of a couple of degrees, Warburg had been given.

Turpentine stupes relieved the abdominal distension. Sometimes, however, they had to be aided by 1 drachm doses by the mouth.

The first attack of hæmorrhage was met with ergot and turpentine; the second by ergot and hazalin, and it seemed to me that the latter acted better. Almost continuous dry cupping was kept up over the lumbar and thoracic regions; it not only appeared to relieve the kidneys, but had the distinct advantage of keeping patient off her back.

It is interesting to note the connection between rises of temperature and decrease in quantity of urine, and the albumen therein. Prior to and during rise of temperature, the face flushed if rise was about to be high or prolonged; the flush was peculiar, not in cheeks alone, but the forehead became puffy, then a bright red, smooth, shining, very similar in appearance to erysipelas.

Although the disease lasted so long, accompanied, too, by such marked digestive disturbance or profuse diarrhœa, the patient wasted very little; she was fat when admitted, and fairly fat when discharged. It goes without saying that such a case involved most arduous nursing and constant attendance. She was splendidly nursed by Nurses Kelly and Keys from the Ushers' Island, Dublin, Institution, and the fact that after 19 weeks she left hospital without a sign of a bed-sore, or the skin being even at any time abraded, speaks volumes for the nursing.

Acknowledgment is also due to Prof. Brereton for the valuable aid afforded me by him in daily consultation.

ERRORS IN HEALTH REPORTS.

THE editor of the (Sacramento) *Occidental Medical Times* announces his discovery that "glaring errors are, unfortunately, frequent in the reports of health departments." In the June report for Denver, for instance, the estimated annual mortality ought to have been 19·04 instead of 10·03 per mille, at which it was stated. He illustrates his assertion by the reported statistics of five other large cities besides Denver. "Most of the discrepancies," he says, "were errors of arithmetic, but in some cases the rate was found in a very unique way. To find the annual rate, the number of deaths for the month was divided by the number of thousands of population. The quotient, of course, gives only the monthly rate, and as this seemed too small for an annual rate, the dilemma was solved by removing the decimal point one place to the right. This mistake occurs in a comparative mortality table published in the Minneapolis health report for June." The want of uniformity in reports is also a serious disadvantage. Each city chooses its own tables and computations, and classifies its own diseases in its own way. Some report weekly, others monthly. Some calculate mortality according to census, others according to estimated population. Thus great difficulties are thrown in the way of the comparative statistician.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, B.A., M.D., Univ. Dubl.; F.R.C.P.I.;
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VITAL STATISTICS

For four Weeks ending Saturday, April 23, 1892.

The deaths registered in each of the four weeks in the sixteen principal Town Districts of Ireland, alphabetically arranged, corresponded to the following annual rates per 1,000:—

TOWNS	Weeks ending				TOWNS	Weeks ending			
	April 2.	April 9.	April 16.	April 23.		April 2.	April 9.	April 16.	April 23.
Armagh -	21·0	14·0	7·0	42·0	Limerick -	46·3	23·9	14·0	28·1
Belfast -	32·4	38·1	30·2	35·9	Lisburn -	34·3	30·0	30·0	25·7
Cork -	31·8	28·4	39·4	29·1	Londonderry	31·4	14·1	15·7	14·1
Drogheda	30·7	13·2	4·4	13·2	Lurgan -	13·7	18·2	31·9	18·2
Dublin -	35·9	32·7	29·8	35·1	Newry -	12·1	36·2	16·1	16·1
Dundalk -	41·9	29·3	20·9	16·8	Sligo -	36·1	20·6	20·6	15·5
Galway -	45·3	37·8	75·6	34·0	Waterford -	25·0	15·0	15·0	22·5
Kilkenny	42·5	42·5	0·0	18·9	Wexford -	27·1	18·1	18·1	40·6

In the week ending Saturday, April 2, 1892, the mortality in thirty-three large English towns, including London (in which the rate was 21·4), was equal to an average annual death-rate of 22·2 per 1,000 persons living. The average rate for eight principal towns of Scotland was 21·2 per 1,000. In Glasgow the rate was 23·5, and in Edinburgh it was 18·5.

The average annual death-rate represented by the deaths registered during the week in the sixteen principal town districts of Ireland was 33·9 per 1,000 of the population (unrevised) according to the recent Census.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 3·7 per 1,000, the rates varying from 0·0 in ten of the districts to 5·3 in Belfast—the 159 deaths from all causes registered in that district comprising 17 from measles, 4 from whooping-cough, 1 from simple continued fever, 4 from enteric fever, 26 from phthisis, and 45 from diseases of the respiratory system. Among

the 46 deaths from all causes registered in Cork are—1 from measles, 1 from whooping-cough, 2 from phthisis, and 15 from diseases of the respiratory system. The 33 deaths in Limerick comprise 1 from scarlatina and 1 from enteric fever, and the 20 deaths in Londonderry comprise 1 from whooping-cough and 1 from enteric fever.

In the Dublin Registration District the registered births amounted to 217—103 boys and 114 girls; and the registered deaths to 250—110 males and 140 females.

The deaths, which are 38 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 37·3 in every 1,000 of the population. Omitting the deaths (numbering 9) of persons admitted into public institutions from localities outside the district, the rate was 35·9 per 1,000. During the first thirteen weeks of the current year the death-rate averaged 38·4, and was 5·8 over the mean rate in the corresponding period of the ten years 1882–1891.

The number of deaths from zymotic diseases registered is 40, being 1 over the number for the preceding week, and 17 in excess of the average for the thirteenth week of the last ten years. The 40 deaths comprise 24 from measles (being 2 over the number of deaths from that disease in the preceding week), 2 from influenza and its complications, 3 from whooping-cough, 1 from enteric fever, 1 from diarrhœa, and 1 from dysentery.

The cases of measles admitted to hospital amounted to 58, against 48 for the preceding week and 21 for the week ended March 19. Thirty measles patients were discharged, 10 died, and 118 remained under treatment on Saturday, being 18 over the number in hospital at the close of the preceding week.

Only 2 cases of enteric fever were admitted to hospital against 3 for each of the two weeks preceding. Five patients were discharged, and 44 remained under treatment on Saturday, being 3 under the number in hospital on Saturday, March 26.

Five cases of scarlatina and 2 of typhus were received during the week: 16 cases of the former and 3 of the latter disease remained under treatment in hospital on Saturday.

Deaths from diseases of the respiratory system amount to 70, or 24 in excess of the average for the corresponding week of the last ten years, and 7 over the number for the week ended March 26. They comprise 45 from bronchitis, 17 from pneumonia or inflammation of the lungs, and 1 from pleurisy.

In the week ending Saturday, April 9, the mortality in thirty-three large English towns, including London (in which the rate was 22·2), was equal to an average annual death-rate of 23·3 per 1,000 persons living. The average rate for eight principal towns of Scotland was 24·1

per 1,000. In Glasgow the rate was 27·7, and in Edinburgh it was 20·2.

The average annual death-rate in the sixteen principal town districts of Ireland was 31·6 per 1,000 of the population (unrevised) according to the recent Census.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 4·2 per 1,000, the rates varying from 0·0 in nine of the districts to 8·1 in Newry—the 9 deaths from all causes registered in that district comprising 2 from diarrhœa. Among the 187 deaths from all causes registered in Belfast are—20 from measles (an increase of 3 as compared with the number for the preceding week), 6 from whooping-cough, 1 from diphtheria, 3 from enteric fever, 4 from diarrhœa, 31 from phthisis, and 42 from diseases of the respiratory system. The 41 deaths in Cork comprise 2 from typhus and 1 from enteric fever, and the 9 deaths in Londonderry comprise 2 from whooping-cough.

In the Dublin Registration District the registered births amounted to 199—101 boys and 98 girls; and the registered deaths to 221—101 males and 120 females.

The deaths, which are 16 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 33·0 in every 1,000 of the population. Omitting the deaths (numbering 2) of persons admitted into public institutions from localities outside the district, the rate was 32·7 per 1,000. During the first fourteen weeks of the current year the death-rate averaged 38·0, and was 5·6 over the mean rate in the corresponding period of the ten years 1882–1891.

The number of deaths from zymotic diseases registered is 36, being 4 under the number for the preceding week, but 13 over the average for the fourteenth week of the last ten years. They comprise 23 from measles (being 1 under the number from that disease in the preceding week), 1 from scarlet fever (scarlatina), 3 from influenza, 3 from whooping-cough, 1 from ill-defined fever, and 1 from dysentery,

The number of cases of measles admitted to hospital is 50, being a decline of 8 as compared with the admissions for the preceding week, but 2 over the number for the week ended March 26. Twenty-three measles patients were discharged, 7 died, and 138 remained under treatment on Saturday, being 20 over the number in hospital at the close of the preceding week.

Four cases of enteric fever were admitted to hospital against 2 for the preceding week. Thirteen patients were discharged, 1 patient died, and 34 patients remained under treatment on Saturday, being 10 under the number in hospital on Saturday, April 2.

The hospital admissions for the week include, also, 2 cases of scarlatina

and 1 case of typhus: 15 cases of the former and 4 of the latter disease remained under treatment in hospital on Saturday.

Deaths from diseases of the respiratory system, which had risen from 63 for the week ended March 26, to 70 for the following week, fell to 45, or 3 under the average for the corresponding week of the last ten years. The 45 deaths consist of 32 from bronchitis and 13 from pneumonia or inflammation of the lungs.

In the week ending Saturday, April 16, the mortality in thirty-three large English towns, including London (in which the rate was 19·4), was equal to an average annual death-rate of 20·9 per 1,000 persons living. The average rate for eight principal towns of Scotland was 22·5 per 1,000. In Glasgow the rate was 25·5, and in Edinburgh it was 19·8.

The average annual death-rate represented by the deaths registered in the sixteen principal town districts of Ireland was 28·5 per 1,000 of the unrevised population based on the Census of 1891.

The deaths from the principal zymotic diseases in the sixteen districts were equal to an annual rate of 3·4 per 1,000, the rates varying from 0·0 in twelve of the districts to 5·2 in Sligo—the 4 deaths from all causes registered in that district comprising 1 from diarrhœa. Among the 148 deaths from all causes registered in Belfast are—13 from measles (being 7 under the number from that cause in Belfast in the preceding week), 1 from scarlatina, 1 from typhus, 3 from whooping-cough, 1 from diphtheria, 1 from simple continued fever, and 3 from diarrhœa. The 57 deaths from all causes registered in Cork comprise 2 from measles, 1 from whooping-cough, 1 from simple continued fever, and 1 from enteric fever.

In the Dublin Registration District the registered births amounted to 161—85 boys and 76 girls; and the registered deaths to 205—99 males and 106 females.

The deaths, which are 14 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of 30·6 in every 1,000 of the population. Omitting the deaths (numbering 5) of persons admitted into public institutions from localities outside the district, the rate was 29·8 per 1,000. During the first fifteen weeks of the current year the death-rate averaged 37·5, and was 5·3 over the mean rate in the corresponding period of the ten years 1882-1891.

Zymotic diseases caused 36 deaths, being equal to the number for the preceding week, and 15 in excess of the average for the fifteenth week of the last ten years. The 36 deaths comprise 14 from measles (being 9 under the number from that cause in the preceding week), 2 from typhus, 2 from influenza and its complications, 5 from whooping-cough, 2 from diphtheria, 4 from enteric fever, and 2 from dysentery.

Eighty-nine cases of measles were admitted to hospital, being 39 in

excess of the admissions for the preceding week, which showed a decrease of 8 as compared with the number for the week ended April 2. Fifty-eight measles patients were discharged, 5 died, and 164 remained under treatment on Saturday, being 26 over the number in hospital at the close of the preceding week.

Six cases of enteric fever were admitted to hospital against 4 for the preceding week and 2 for the week ended April 2. Nine patients were discharged, 1 died, and 30 remained under treatment on Saturday, being 4 under the number in hospital on Saturday, April 9.

The hospital admissions for the week include, also, 3 cases of scarlatina and 1 case of typhus: 12 cases of the former and 2 of the latter disease remained under treatment in hospital on Saturday.

As in the week preceding, 45 deaths from diseases of the respiratory system were registered. These comprise 26 from bronchitis, and 14 from pneumonia or inflammation of the lungs. The average number of deaths from diseases in this group during the fifteenth week of the last ten years was 40.

In the week ending Saturday, April 23, the mortality in thirty-three large English towns, including London (in which the rate was 21·0), was equal to an average annual death-rate of 21·8 per 1,000 persons living. The average rate for eight principal towns of Scotland was 22·3 per 1,000. In Glasgow the rate was 26·0, and in Edinburgh it was 18·5.

The average annual death-rate in the sixteen principal town districts of Ireland was 31·9 per 1,000 of the population (unrevised) according to the recent Census.

The deaths from the principal zymotic diseases registered in the sixteen districts were equal to an annual rate of 5·2 per 1,000, the rates varying from 0·0 in ten of the districts to 10·3 in Sligo—the 3 deaths from all causes registered in that district comprising 1 from scarlatina and 1 from typhus. Among the 176 deaths from all causes registered in Belfast are—18 from measles (an increase of 5 as compared with the number for the preceding week), 2 from scarlatina, 4 from whooping-cough, 1 from diphtheria, 1 from simple continued fever, 2 from enteric fever, and 4 from diarrhoea. The 42 deaths in Cork comprise 3 from measles, 1 from typhus, and 1 from diphtheria. Among the 9 deaths in Galway are—1 from whooping-cough and 1 from diarrhoea. The 3 deaths in Drogheda comprise 1 from typhus and 1 from diphtheria.

In the Dublin Registration District the registered births amounted to 176—91 boys and 85 girls; and the registered deaths to 240—125 males and 115 females.

The deaths, which are 43 over the average number for the corresponding week of the last ten years, represent an annual rate of mortality of

35·8 in every 1,000 of the population. Omitting the deaths (numbering 5) of persons admitted into public institutions from localities outside the district, the rate was 35·1 per 1,000. During the first sixteen weeks of the current year the death-rate averaged 37·4, and was 5·4 over the mean rate in the corresponding period of the ten years 1882–1891.

As many as 55 deaths from zymotic diseases were registered, being 34 in excess of the average for the corresponding week of the last ten years, and 19 over the number for the week ended April 16. They comprise 33 from measles (against 14 from that cause for the preceding week), 4 from influenza and its complications, 10 from whooping-cough, 1 from enteric fever, and 2 from diarrhœa.

The number of cases of measles admitted to hospital during the week is 73, being a decline of 16 as compared with the admissions for the preceding week, which were 39 in excess of the number for the week ended April 9. Fifty-seven measles patients were discharged, 6 died, and 174 remained under treatment on Saturday, being 10 over the number in hospital at the close of the preceding week.

Only 3 cases of enteric fever were admitted to hospital, being 3 under the admissions for the preceding week, and 1 under the number for the week ended April 9. Six patients were discharged, and 27 remained under treatment on Saturday, being 3 under the number in hospital on Saturday, April 16.

The hospital admissions for the week include, also, 3 cases of scarlatina, but no cases of typhus were received: 13 cases of the former and 1 case of the latter disease remained under treatment in hospital on Saturday.

Forty-six deaths from diseases of the respiratory system were registered, being 3 over the average for the corresponding week of the last ten years and 1 over the number for the week ended April 16. They comprise 29 from bronchitis and 16 from pneumonia or inflammation of the lungs.

METEOROLOGY.

*Abstract of Observations made in the City of Dublin, Lat. 53° 20' N.
Long. 6° 15' W., for the Month of April, 1892.*

Mean Height of Barometer,	-	-	-	30·039 inches.
Maximal Height of Barometer (on 1st, at 9 a.m.),	-	-	-	30·506 „
Minimal Height of Barometer (on 27th, at 9 a.m.)	-	-	-	29·655 „
Mean Dry-bulb Temperature,	-	-	-	45·3°.
Mean Wet-bulb Temperature,	-	-	-	42·2°.
Mean Dew-point Temperature,	-	-	-	38·7°.
Mean Elastic Force (Tension) of Aqueous Vapour,	-	-	-	·239 inch.
Mean Humidity,	-	-	-	78·2 per cent.

Highest Temperature in Shade (on 20th)	-	-	63·8°.
Lowest Temperature in Shade (on 15th),	-	-	27·3°.
Lowest Temperature on Grass (Radiation) (on 15th),			22·0°.
Mean Amount of Cloud,	-	-	42·7 per cent.
Rainfall (on 13 days),	-	-	1·114 inches.
Greatest Daily Rainfall (on 24th),	-	-	·410 inch.
General Directions of Wind,	-	-	N.W., E.N.E

Remarks.

Like April, 1891, this was a cold, rather dry and March-like month. The mean temperature, rainfall, and rainy days were all below the average. On six days, indeed, the thermometer rose above 60° in the shade, but on five nights it fell below 32°, even in the screen.

In Dublin the arithmetical mean temperature (46·2°) was 1·5° below the average (47·7°); the mean dry bulb readings at 9 a.m. and 9 p.m. were 45·3°. In the twenty-seven years ending with 1891, April was coldest in 1879 (the cold year) (M. T. = 44·5°), and warmest in 1865 and 1874 (M. T. = 50·4°). In 1886 the M. T. was 46·3°, in 1887 it was as low as 45·1°, in 1888 it was (as in 1891) only 45·7°, in 1889 it was 46·1°, and in 1890 it was 47·3°.

The mean height of the barometer was 30·039 inches, or 0·189 inch above the average value for April—namely, 29·850 inches. The mercury was as high as 30·506 inches at 9 a.m. of the 1st, and fell to 29·655 inches at 9 a.m. of the 27th. The observed range of atmospherical pressure was, therefore, 0·851 inches—that is, a little less than nine-tenths of an inch.

The mean temperature deduced from daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. was 45·3°, or 7·5° above the value for March, 1892. Using the formula, *Mean Temp.* = *Min.* + (*max*—*min.* × ·476), the value becomes 45·8°, or 1·6° below the average mean temperature for April, calculated in the same way, in the twenty-five years, 1865–89, inclusive (47·4°). The arithmetical mean of the maximal and minimal readings was 46·2°, compared with a twenty-five years' (1865–1889 inclusive) average of 47·7°. On the 20th the thermometer in the screen rose to 63·8°—wind, S.W.; on the 15th the temperature fell to 27·3°—wind, N.N.W. The minimum on the grass was 22·0° also on the 15th.

The rainfall was only 1·114 inches, distributed over 13 days. The average rainfall for April in the twenty-five years, 1865–89, inclusive, was 2·055 inches, and the average number of rainy days was 15·2. The rainfall, therefore, was considerably below the average, while the rainy days were also deficient. In 1877 the rainfall in April was very large—4·707 inches on 21 days; in 1882 also 3·526 inches fell on 20 days. On the other hand, in 1873, only ·498 of an inch was measured on 8 days; and

in 1870 only $\cdot 838$ of an inch fell, also on 8 days. The fall in 1890 was $1\cdot 575$ inches on 14 days, and in 1891, $1\cdot 553$ inches fell on 14 days.

Solar halos were seen on the 7th and 30th. There was a lunar halo on the 7th. The atmosphere was more or less foggy on the 1st, 2nd, 6th, 7th, 10th, 11th, 12th, 14th, 18th, and 19th. High winds were noted on only 3 days, and did not reach the force of a gale on any occasion. Snow or sleet fell on the 13th and four following days, while hail fell on the 13th, 14th, 15th, 16th, 18th, 25th, 26th, and 27th. The temperature exceeded 50° in the screen on 24 days, compared with 18 days in April, 1891, 7 days in March, 6 in February, and 6 in January. It rose above 60° on 6 days, and fell below 32° in the screen on 5 nights. The minima on the grass were 32° , or less, on 14 nights, compared with 25 nights in March, 16 in February, and 25 in January. The mean lowest temperature on the grass was $32\cdot 4^{\circ}$, compared with $34\cdot 1^{\circ}$ in 1891 and 1890, $34\cdot 4^{\circ}$ in 1889, $34\cdot 6^{\circ}$ in 1888, and $31\cdot 6^{\circ}$ in 1887.

The first two days of the month were beautiful, calm and frosty by night, brilliant by day with light easterly sea breezes. The diurnal range of temperature was extremely large at inland stations—thus on Friday, the 1st, at Loughborough, in Leicestershire, the minimum was 26° and the maximum was 72° —range 46° ; at Parsonstown the corresponding values were— 28° and 68° , range 40° ,

Most favourable weather prevailed during the week ended Saturday, the 9th. The range of atmospherical pressure was especially small, and temperature was much higher than for a long time past—the advance on the previous week being no less than $10\cdot 5^{\circ}$. Although the barometrical range was not large, the changes in pressure were frequent and irregular—particularly between Sunday and Wednesday, when rain fell in Ireland, Scotland, and Wales, but not heavily. In the interval from Tuesday evening to Thursday evening thunder and lightning occurred over France, the western half of the English Channel, and the extreme southwest of Ireland—the electrical disturbances seemed to pass in a northwesterly direction, skirting the southwestern edge of an anticyclone of no great height, which formed over the British Islands on Tuesday evening. Some very high day temperatures for the time of year (70° to 73°) were recorded daily in England up to Thursday, when temperature began to give way generally under the influence of a freshening easterly wind. Much haze and fog accompanied this fall of temperature—at least at night. The days, however, were fair and bright after Thursday. In Dublin the mean atmospherical pressure was $29\cdot 993$ inches, the barometer being observed to range between $30\cdot 219$ inches at 9 a.m. of Sunday (wind, E.), and $29\cdot 916$ inches at 9 p.m. of Monday (wind, S.W.). The corrected mean temperature was $49\cdot 9^{\circ}$, or $10\cdot 5^{\circ}$ above the value for the preceding week. The daily readings of the dry bulb thermometer at 9 a.m. and 9 p.m. were on an average $48\cdot 8^{\circ}$. The shade thermometers rose to $62\cdot 4^{\circ}$

on Monday, having fallen to 40.2° on Sunday. Rain was measured on two days to the amount of $\cdot 073$ inch, $\cdot 043$ inch being credited to Tuesday and $\cdot 030$ inch to Monday. The prevailing winds were E. and E.N.E.

The week ended Saturday, the 16th, witnessed a plunge into midwinter with its attendant frosts and snows. The mean temperature was no less than 9.1° lower than that of the previous week (40.8° compared with 49.9°) and nearly all the precipitation was in the form of snow and hail. At the beginning the weather was fine and dry as well as moderately warm with light easterly breezes by day and some haze or fog by night, when the air periodically fell calm. During this period the diurnal range of temperature was very large at inland stations—at Cambridge the thermometer fell from 70° on Sunday the 10th to 29° during the ensuing night; at Parsonstown the extremes in the same time were—max. 67° , min. 31° . In Dublin the range was much less—max. 53.6° , min. 38.9° on Sunday. On Tuesday depressions began to pass southwards across Scandinavia and the North Sea, with the result that the wind freshened from N.W., N., and N.E., and falls of cold rain, hail, and snow became very general. This state of things lasted to the close of the week, which thus proved very inclement. In Dublin the mean height of the barometer was 29.849 inches, pressure ranging between 30.004 inches at 9 a.m. of Sunday (wind E.N.E.), and 29.662 inches at 2 p.m. of Saturday (wind N.N.E.). The corrected mean temperature was 40.8° . The mean dry bulb readings at 9 a.m. and 9 p.m. were 40.0° . The screened thermometers rose to 56.6° on Monday and fell to 27.3° on Friday, when also the grass minimum was only 22.0° . The rainfall amounted to $\cdot 283$ inch on three days. It was almost entirely in the form of snow and hail. On Tuesday the measurement was $\cdot 176$ inch. The prevailing winds were N.E. and N.W. At first the nights were calm and foggy.

Opening with very severe winterly weather, the week ended Saturday, the 23rd, ultimately proved very favourable, genial and springlike. The mean temperature of Easter Day, 1892, was in Dublin only 36.0° , or 0.7° below that of Christmas Day, 1891. In the early morning the ground was covered with snow, and snow and sleet fell in frequent showers during the afternoon. Monday was fine, but very cold, with a dry nipping air—at night sharp frost occurred, the thermometer falling to 29.3° in the screen and to 23.4° on the grass. On Tuesday a change to much milder weather began. Up to this time the barometer had been lowest over the North Sea, highest off the west of Ireland—hence a prevalence of northerly winds and low temperatures. From Tuesday onwards the area of lowest pressure was found in the N.W. and N., so that southwesterly to westerly winds predominated, accompanied by much higher temperatures and passing showers at times. A wave of high pressure passed eastwards over the country on Friday night, and was followed by a new depression in the northwest on Saturday, causing a

much-needed fall of rain on the afternoon of that day. In Dublin the mean height of the barometer was 30·190 inches, pressure ranging from 29·868 inches at 9 a.m. of Sunday (wind, N.) to 30·429 inches at 9 a.m. of Saturday (wind W. by N.). The corrected mean temperature was 47·3°. The mean dry bulb readings at 9 a.m. and 9 p.m. were 47·4°. The screened thermometers fell to 28·1° on Sunday and rose to 63·8° on Wednesday. Rain fell in measurable quantity on four days to the amount of ·163 inch, of which ·125 inch was collected on Saturday. The prevailing winds were—first, N.; afterwards S.W. and W. An aurora borealis appeared on Saturday night.

Changeable, rather cold, but not unfavourable weather held throughout the week ended Saturday, the 30th. The general tendency was for the advance over Northern and Western Europe of numerous depressions, of no great depth, from the northwestward. These systems kept the weather in an unsettled, rainy or showery state, while varying winds from Polar quarters (N.W. to E.) prevailed. The night temperatures were decidedly low, and notwithstanding many intervals of bright sunshine very little advance in temperature occurred even by day. The most striking feature of the week was a splendid display of aurora borealis on Monday night—it was seen from most parts of the British Isles. In central and eastern England heavy showers of hail and sleet, accompanied by thunder and lightning, fell on Monday, Tuesday, and Wednesday. In Dublin also hail fell on each of these days, there was a heavy downpour of rain on Sunday night, and a cold rain set in on Friday shortly after midnight, which fell in the form of snow on the mountains south of the city. In Dublin the mean height of the barometer was 30·014 inches, pressure varying between 30·411 inches at 9 a.m. of Sunday (wind, N.W.), and 29·655 inches at 9 a.m. of Wednesday (wind, W.N.W.). The corrected mean temperature was 45·6°, or 1·7° below that of the preceding week. The mean dry bulb readings at 9 a.m. and 9 p.m. were 45·4°. On Saturday the thermometers in the screen rose to 57·8°, having been down to 33·9° during the previous night. The rainfall was ·595 inch on four days. Of this quantity ·410 inch was entered to Sunday. The prevailing wind was northwesterly.

The rainfall in Dublin during the four months ending April 30th has amounted to 5·922 inches on 61 days compared with only 3·203 inches on 46 days during the same period in 1891, 9·045 inches on 59 days in 1890, 8·345 inches on 74 days in 1889, 8·090 inches on 58 days in 1888, and a 25 years' average of 8·466 inches on 66·2 days.

At Knockdolian, Greystones, Co. Wicklow, the rainfall during April, 1892, amounted to only ·648 of an inch, distributed over 10 days; ·250 inch falling on the 24th. The total fall since January 1st, 1892, equals only 4·853 inches on 50 days.

PERISCOPE.

PRESENTATION TO SIR GEORGE BUCHANAN, F.R.S.

As our readers are doubtless aware, Sir George Buchanan has lately resigned the post of Medical Officer of the Local Government Board for England. A Committee has been formed with a view to forwarding a movement for enabling those interested in public health throughout the country to give expression to the high estimation in which they hold the important work which Sir George Buchanan has done and for affording some opportunity for the recognition of his conspicuous services in the cause of Preventive Medicine. Under these circumstances it has been decided to open a subscription list (not to exceed two guineas from each contributor) with a view to presenting to Sir George Buchanan some permanent memento of the esteem in which he and his work are held. The Council of the Society of Medical Officers of Health has expressed a desire to be associated with the Committee in inviting subscriptions to the fund. Dr. J. S. Bristowe is the hon. treasurer. The honorary secretaries, to whom contributions may be sent, are—W. H. Hamer, Esq., Ladywell, 69 Dartmouth Park Hill, London, N.W., and J. C. Thresh, Esq., The Limes, Chelmsford, Essex.

BACILLUS LEPRÆ.

ACCORDING to the *Occidental Medical Times*, this microbe, which had been discovered after laborious research, has been lost again. The Indian Leprosy Commission have not succeeded in cultivating their bacillus. After submitting it to Fränkel and Baumgarten, they declare that their cultivated product is not morphologically identical with the bacillus of leprosy. The new bacillus is the "Bacillus epidermidis," identical with the carcinoma bacillus. So, at least, Baumgarten says.

LAPAROTOMY FOR INTESTINAL PERFORATION IN ENTERIC FEVER.

DR. WELLER VAN HOOK reports (*Medical News*, Philadelphia, November 21, 1891) a successful case of laparotomy for perforation in enteric fever. The operation was done 9½ hours after perforation, the opening was about 2 mm. in diameter; three longitudinal rows of Lembert sutures were used.

HYPERPYREXIA IN ACUTE RHEUMATISM.

DR. ALEX. ROBERTSON reports (*Glasgow Medical Journal*, November, 1891) a case of hyperpyrexia in acute rheumatism. The highest temperature observed was 106·8°. The patient was put into a bath at 90° F.,

which was reduced by the addition of cold water to 71°. The patient was kept in the water for twenty-five minutes, at the end of which time the temperature was 101·4° F., and the pulse had fallen from 160 to 120. Five minutes after being placed in bed the temperature had fallen to 97·2°. The case ended in recovery, but pre-systolic murmur at the apex was established.

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

Therapeutical Novelties.

MESSRS. BURROUGHS, WELLCOME, and Co., of Snow Hill Buildings, London, E.C., have placed in our hands a number of preparations which they have recently introduced :—

1. The first of these preparations is called “Malto-Ricine.” It is a mixture of Kepler Extract of Malt, with 50 per cent. of the finest castor oil—hence the name. So intimately mixed are the ingredients that this Kepler Extract of castor oil and malt extract may be described as a solution rather than as an emulsion. The malt extract sufficiently cloaks the disagreeable taste of castor oil, so that this preparation will no doubt be readily taken by children. The dose varies from one to four teaspoonfuls, and it may be taken plain or mixed with milk.

2. “Hazeline Snow” is a very elegant emollient toilet preparation of hazeline (50 per cent.), lanoline, and presumably oxide of zinc. It rubs in thoroughly, so that it leaves no trace of greasiness behind it. As a remedy for chapped hands this ointment promises to surpass all previous claimants for public favour.

3. The “Compound Menthol Snuff” is stated to be composed of menthol, chloride of ammonium, cocain, lycopodium, and camphor. It is an agreeable combination for insufflation in coryza, and is of course possessed of both anodyne and antiseptic properties.

4. Mr. Hugh Lane, in his work on “Differentiation in Rheumatic Diseases,” of which the second edition has just been published by Messrs. J. & A. Churchill, of London, speaks highly of a combination of sulphur, salicylate of quinine, and benzoate of lithium, as an excellent remedy in chronic rheumatic arthritis. Messrs. Burroughs, Wellcome, & Co. have made up his formula in tabloid form. Each sugar-coated tabloid consists of 2 grains of precipitated sulphur, one-third of a grain of salicylate of quinine, 3 grains of benzoate of lithia, saccharin, &c., 100 parts. Five to seven of these tabloids may be taken every morning, and this treatment—according to Mr. Lane—persevered in for some time, hardly ever fails to produce more or less good results—even in obstinate cases of chronic rheumatic arthritis.

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